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THE BIRDS OF SCOTT COUNTY, IOWA.

BY BURTIS H. WILSON.

Scott County lies on the north bank of the Mississippi river, which flows westward in this part of its course. The country consists mostly of rich, rolling farming land, with a few pieces of second growth oak timber, and much willow, maple, and elm timber along the river bottoms and on its islands. High bluffs interrupt the narrow border of rich bottomland over which the river often spreads during the high spring water. During the first ten years of my studies the country roads were nearly everywhere bordered by osage hedges, but during the past ten years the most of these hedges have been replaced by the more useful and effectual barbed-wire fence. These hedges and the orchards and shade trees surrounding the farm houses formed excellent breeding places for many species.

A muddy creek, called Duck creek, which is usually nearly dry during the summer, but from ten to twenty feet wide during the rest of the year, flows easterly just north of the city of Davenport, and then into the Mississippi river about three miles east of the city limits.

The city of Davenport, which occupies about ten square miles of the county, has several large parks, and there are many shade trees in the yards and along the streets, forming ideal resorts for the town-loving birds, as well as for many rare straggles which occasionally stop. Fully half of my observations were made within the city limits, but many of them were in the thinly settled outskirts.

The studies upon which this list are based cover the years from 1884 to 1904. The work was necessarily irregular. Doubtful records are numerous, but none of them have been included in this list.

Podilymbus podiceps. Pied-billed Grebe.—One shot April 16, 1892.

Hydrochelidon nigra surinamensis. Black Tern.—One shot May 22, 1892.

Phalacrocorax dilophus. Double-crested Cormorant.—14 seen August 9, 1892, and 6 seen August 24, 1893.

Pelecanus erythrorhynchos. American White Pelican.—One shot October 3, 1893, on the river below the city.

Querquedula discors. Blue-winged Teal.—Common migrant.

Aythya affinis.. Lesser Scaup Duck.—Abundant migrant. March 15 to April 22, 1892. First in fall, Nov. 25.

Chen hyperborea. Lesser Snow Goose.—Rare transient. Always seen in flocks with the Canada (?) Geese. Four seen March 22, 1890; 4, April 1st, 1891; 7, April 16, 1889.

Branta canadensis. Canada Goose.—Abundant migrant in spring, rare in fall. Feb. 17 to April 1; 50 seen Oct. 25, 1891. Only fall record, 1885-1894.

Botaurus lentiginosus. American Bittern.—Rather rare summer resident, probably because there are few favorable breeding localities here. Arrives last of April.

Ardetta exilis. Least Bittern.—Rare summer resident. There are few suitable breeding places. May 8, 1888; May 30, 1889; May 26, 1892.

Ardea herodias. Great Blue Heron.—Rather uncommon. Probably does not breed. April 28 to May 16; September 6 to 29.

Butorides virescens. Green Heron.—Common summer resident. April 25 to September 29. Eggs May 7, 1892; 30, 1889. Young out of nest June 24, 1887.

Nycticorax nycticorax nævius. Black-crowned Night Heron.—Common summer resident. April 23 to September 19.

Rallus elegans. King Rail.—Rare transient. One shot April 30, 1891.

Porzana carolina. Sora.—Not common transient. May 6 to 24.

Porzana noveboracensis. Yellow Rail.—Rare migrant. One shot September 20, 1890.

Rallus virginianus. Virginia Rail.—Rare migrant. One shot May 12, 1898.

Fulcia americana. American Coot.—Seen only in the fall. October 18, 1889 and 1891, and 8, 1888.

Philohela minor. American Woodcock.—Rare summer resident. On August 17, 1890, one flushed from a clump of small trees in a city yard.

Gallinago delicata. Wilson's Snipe.—Abundant migrant. April 1 to 29; September 20 to November 2.

Actodromas maculata. Pectoral Sandpiper.—Abundant migrant. April 11 to May 20; September 17 to 27.

Actodromas minutilla. Least Sandpiper.—Rare migrant. May 20, 1890; May 11, 1891.

Helodromas solitarius.. Solitary Sandpiper.—Abunlant migrant. April 25 to May 7; September 3 to October 10.

Bartramia longicauda. Bartramian Sandpiper.—Rare summer resident. One seen April 26, 1892. Female ready to lay in a day or two shot May 11, 1890. No fall records.

Actitis macularia. Spotted Sandpiper.—Common summer resident. April 26 to September 13.

Charadrius dominicus. American Golden Plover.—Rare migrant. On October 24, 1889, one was found early in the morning lying dead under a 100-foot electric tower.

Oxyechus vociferus. Killdeer.—Not common summer resident. March 12 to October 19.

Colinus virginianus. Bob-white.—Common resident. A great increase since 1900.

Tympanuchus americanus. Prairie Hen.—Tolerably common resident. Nest containing one addled egg and shells of seven recently hatched eggs found in tall slough grass on June 9, 1888.

Zenaidura macroura. Mourning Dove.—Abundant summer resident. Occasionally winters. March 21 to October 19. Eggs found as early as April 12.

Accipiter velox. Sharp-shinned Hawk.—Rather rare. Seen only in the fall. September 20 to November 2.

Accipiter cooperii. Cooper Hawk.—Common resident, but more often seen in the fall. Four eggs, May 7, 1892; three eggs, May 9, 1891.

Buteo borealis. Red-tailed Hawk.—Common resident.

Buteo platypterus. Broad-winged Hawk.—Tolerably common in spring; rare in fall. April 21 to May 21. One seen September 26, 1891.

Archibuteo lagopus sancti-johannis. American Rough-legged Hawk.—Tolerably common winter resident.

Haliæetus leucocephalus. Bald Eagle.—Rare straggler. Seen at every season of the year. None breed in the county to my knowledge.

Falco sparverius. American Sparrow Hawk.—Tolerably common summer resident. March 25 to October 12.

Asio wilsonianus. American Long-eared Owl.—Tolerably common summer resident. Colonies of a dozen or more winter together in evergreens in the cemeteries. Nest with five eggs, April 12, 1890.

Syrnium varium. Barred Owl.—Rare resident. One shot in a yard in Davenport.

Cryptoglaux acadica. Saw-whet Owl.—Rare winter resident. April 2, 1890; February 2, 1889; March 21, 1891.

Megascops asio. Screech Owl.—Common resident. About equal numbers found in the red and in the gray stage.

Bubo virginianus. Great Horned Owl.—Tolerably common resident. Occasionally wanders into Davenport.

Coccyzus americanus. Yellow-billed Cuckoo.—Abundant summer resident. May 17 to October 8. Eggs found May 28 to August 19.

Coccyzus erythorphthalmus. Black-billed Cuckoo.—Tolerably common summer resident. May 23 to August 30. Nest, May 30, 1902.

Ceryle alcyon. Belted Kingfisher.—Common summer resident. March 19 to October 12. Two fresh eggs, May 18, 1889.

Dryobates villosus. Hairy Woodpecker.—Common resident.

Dryobates pubescens medianus. Downy Woodpecker.—Abundant resident.

Sphyrapicus varius. Yellow-bellied Sapsucker.—Abundant migrant. April 2 to 29; September 16 to October 28. Stomach occasionally found filled with chips of sap-wood.

Melanerpes erythrocephalus. Red-headed Woodpecker.—Abundant summer resident. Occasionally an individual or a pair winters. By spring the white feathers are almost blackened with soot.

Centurus carolinus. Red-bellied Woodpecker.—Tolerably common resident.

Colaptes auratus luteus. Northern Flicker.—Abundant summer resident. Stragglers sometimes winter. Fresh eggs, May 26, 1892.

Antrostomus vociferus. Whip-poor-will.—Tolerably common summer resident. Arrives as early as April 23.

Chordeiles virginianus. Nighthawk.—Abundant summer resident. May 5 to October 2.

Chætura pelagica. Chimney Swift.—Abundant summer resident. April 15 to September 26.

Trochilus colubris. Ruby-throated Hummingbird.—Abundant sumer resident. May 8 to October 6.

Tyrannus tyrannus. Kingbird.—Abundant summer resident. April 25 to September 13. Earliest eggs, May 21, 1887.

Myiarchus crinitus. Crested Flycatcher.—Common summer resident. April 30 to September 10. Nest, June 26, 1888. In 1887 a pair nested in the bird house which was placed in an oak tree in a yard in the heart of the city of Davenport. Five eggs were deposited.

Sayornis phœbe. Phœbe.—Abundant summer resident. March 21 to November 7. Earliest nest, April 28, 1888. Nests are occa-

sionally placed on the perpendicular walls of wash-outs in clay soil.

Contopus virens. Wood Pewee.—Abundant summer resident. May 9 to September 25. Earliest nest, June 15, 1889.

Empidonax flaviventris.—Yellow-bellied Flycatcher. Rare. Seen only 4 times, May 24 and September 6, 1890; June 2 and September 16, 1889.

Empidonax virescens. Green-crested Flycatcher.—Rare. One taken May 21, 1888.

Empidonax traillii. Traill's Flycatcher.—Common summer resident. Earliest seen, May 1, 1888.

Empidonax minimus. Least Flycatcher.—Rare transient. One taken May 4, 1889.

Octocoris alpestris. Horned Lark.—Tolerably common winter resident.

Otocoris alpestris praticola. Prairie Horned Lark.—Abundant summer resident. A nest with half incubated eggs, April 12, 1892.

Cyanocitta cristata. Blue Jay.—Abundant resident, and even more numerous during the migrations. Nest with five eggs, May 14, 1892.

Corvus brachyrhynchos. American Crow.—Abundant resident. Earliest nest, with five eggs, April 2, 1890.

Molothrus ater. Cowbird.—Abundant summer resident. March 26 to October 13. Earliest eggs, May 3, 1890, in Phœbe's nest.

Dolichonyx oryzivorus. Bobolink.—Common summer resident. Earliest arrival, April 28, 1887. Fresh eggs, May 28, 1889.

Agelaius phœniceus. Red-winged Blackbird.—Abundant summer resident, and migrant. February 23 to November 11. Occasionally a straggler is seen in winter. Earliest eggs, May 21, 1887.

Sturnella magna. Meadowlark.—Abundant summer resident. An occasional straggler remains all winter. March 13 to November 2. Eggs, May 27, 1887.

Icterus spurius. Orchard Oriole.—Abundant summer resident. Earliest spring arrival, April 26. Three eggs, May 21, 1887.

Icterus galbula. Baltimore Oriole.—Abundant summer resident. April 27 to September 5. Five eggs, May 30, 1889.

Euphagus carolinus. Rusty Blackbird.—Abundant migrant. Usually found in flocks with the other blackbirds and grackles. March 23 to April 30; September 14 to December 7. A pair wintered on Rock Island Arsenal during the winter 1899-1900. They became tame and came every day to the guard house for the crumbs which the guards threw out to them.

Quiscalus quiscula æneus. Bronzed Grackle.—Abundant summer resident. March 8 to November 5. Earliest eggs, May 1, 1886. A colony of several hundred pairs used to nest in Pine Hill Cemetery, just outside of Davenport, but in recent years it has been reduced

to about a dozen pairs, no doubt owing to the persistent robbing of their nests by boys from the city.

Hesperiphona vespertina. Evening Grosbeak.—Rare winter visitor. Seen from November 24 to January 21.

Carpodacus purpureus. Purple Finch.—Common migrant. March 1 6to May 10; September 7 to November 6. Several spent the winter of 1889-90 in this locality, January being the only month in which they were not seen.

Loxia curvirostra minor. American Crossbill.—Irregular winter resident. October 21 to June 9.

Acanthis linaria. Redpoll.—Not common winter resident. Seen as late in spring as April 1.

Astragalinus tristis. American Goldfinch.—Irregular winter resident, abundant summer resident. Breeds very late. Nest with three newly hatched young, August 6, 1893, and another with young about ten days old, September 27, 1888. Nest with four fresh eggs, September 5, 1889.

Calcarius pictus. Smith's Longspur.—Migrant. Not common. Seen only in spring, March 30 to April 16.

Pocecetes gramineus. Vesper Sparrow.—Common summer resident. April 1 to Oct. 26. Nest with 4 young found May 22, 1889.

Ammodramus sandwichensis savanna. Savanna Sparrow.—Tolerably common migrant. Usually seen only in spring, April 1 to 29. Two seen Oct. 26, 1889.

Coturniculus savannarum passerinus. Grasshopper Sparrow.—Common summer resident. Earliest spring record, April 30, 1891. Nest with five eggs found May 27, 1889.

Chondestes grammacus. Lark Sparrow.—Common summer resident. Earliest spring record, April 20, 1889.

Zonotrichia querula. Harris' Sparrow.—Rare migrant. April 16, 1891, May 3, 1891.

Zonotrichia leucophrys. White-crowned Sparrow.—Tolerably common migrant. April 30 to May 23; September 28 to October 26.

Zonotrichia albicollis. White-throated Sparrow.—Abundant migrant. March 17 to May 23; September 18 to October 29. Occasionally one winters.

Spizella monticola. Tree Sparrow.—Abundant winter resident. Oct. 17 to April 16.

Spizella socialis. Chipping Sparrow.—Abundant summer resident. April 4 to October 21. First eggs (set of four), May 6, 1886.

Spizella pusilla. Field Sparrow.—Abundant summer resident. March 25 to October 29. Earliest eggs, May 1, 1886. Latest nest with slightly incubated eggs, July 26, 1889.

Junco hyemalis. Slate-colored Junco.—Very abundant migrant. Common winter resident some years. Sept. 21 to May 5.

Melospiza cinerea melodia. Song Sparrow.—Abundant summer resident. March 14 to Nov. 3.

Melospiza lincolinii. Lincoln Sparrow.—Tolerably common migrant. April 28 to May 21; October 17, 1891, is the only fall record.

Melospiza georgiana. Swamp Sparrow.—Common migrant. March 25 to May 19; September 16 to October 17.

Passerella iliaca. Fox Sparrow.—Abundant migrant. March 12 to April 23; September 25 to November 5.

Pipilo erythrophthalmus. Towhee.—Abundant summer resident. March 16 to Nov. 5. A female has spent the present winter on Rock Island Arsenal.

Zamelodia ludoviciana. Rose-breasted Grosbeak.—Abundant summer resident. April 25 to September 29. Earliest nest, May 13, 1886. Four eggs, May 30, 1887.

Cyanospiza cyanea. Indigo Bunting.—Abundant summer resident. May 4 to September 29.

Spiza americana. Dickcissel.—Abundant summer resident. April 25 to September 28. A nest containing four eggs on April 27, 1889, would indicate an earlier arrival than has been noted.

Piranga erythromelas. Scarlet Tanager.—Common summer resident. April 28 to September 21. Nest with four young, June 15, 1889.

Piranga rubra. Summer Tanager.—Rare straggler. One secured April 20, 1889.

Progne subis. Purple Martin.—Abundant summer resident. April 7 to August 28. (First, March 24, 1888, March 29, 1892.)

Petrochelidon luniforms. Cliff Swallow.—Abundant summer resident, usually seen only in the vicinity of its breeding places. April 14 to August 31.

Hirundo erythrogaster. Barn Swallow.—Common summer resident. April 27 to September 1. Nest with four eggs under a small bridge, July 24, 1884.

Iridoprocne bicolcr. Tree Swallow.—Common summer resident. April 1 to September 26.

Clivicola riparia. Bank Swallow.—Abundant summer resident.—April 19 to August 31. Gathers in flocks of several thousands on the telegraph wires along the railroads before leaving in the fall.

Stelgidopteryx serripennis. Rough-winged Swallow.—Common summer resilent. Seldom noticed on account of its similarity to the Bank Swallow. Earliest spring record, April 25, 1891.

Amperlis garrulus. Bohemian Waxwing.—One secured November 21, 1888.

Ampelis cedrorum. Cedar Waxwing.—Common summer resident. Abundant but irregular migrant. February 2 to November 15. Nest with four eggs about June 15, 1886. Seen feeding young in the nest, June 28, 1887.

Lanius borealis. Northern Shrike.—Common winter resident, formerly much more common than the last few years. It rarely comes into the city in pursuit of the English Sparrows, but formerly it frequently came even into the business districts. Oct. 24 to April 1st.

Lanius ludovicianus excubitorides. White-rumped Shrike.—Common summer resident. March 23 to September 9. Five eggs, April 22, 1890.

Vireo olivaceus. Red-eyed Vireo.—Abundant summer resident. May 8 to September 21.

Vireo philadelphicus. Philadelphia Vireo.—Tolerably common migrant. May 11 to 20; September 21 to 28.

Vireo gilvus. Warbling Vireo.—Abundant summer resident. April 27 to September 14. Nests with one fresh egg, May 30, 1891; June 13, 1888.

Vireo flavifrons. Yellow-throated Vireo.—Common migrant. Rare summer resident. May 10 to 26; September 8 to 21.

Vireo solitarius. Blue-headed Vireo.—Rather rare migrant. May 10 to 14; September 21 to 28.

Vireo belli. Bell's Vireo.—Common summer resident. May 12 to August 31. Nests with eggs, July 5, 1886; June 13, 1890; June 16, 1891.

Mniotilta varia. Black and White Warbler.—Tolerably common migrant. April 24 to May 20; September 16 to 26.

Protonotaria citrea. Prothonotary Warbler.—Rare summer resident. Seen from May 2 to June 5, but no nests have been found in the county. It breeds near Muscatine, commonly on the wooded bottoms along the Mississipi river.

Helminthophila pinus. Blue-winged Warbler.—Rare migrant. May 3 to 21. Seen only in the spring.

Helminthophila rubricapilla. Nashville Warbler.—Common migrant. May 6 to 23; September 14 to 28.

Helminthophila celata. Orange-crowned Warbler. Probably a common migrant, but seldom noticed. May 6 to 16; October 5 to 17.

Helminthophila peregrina. Tennessee Warbler.—Tolerably common migrant. May 9 to 30; September 18 to 21.

Compsothlypis americana ramalinæ. Western Parula Warbler.—Tolerably common migrant. May 1 to 16, Not seen in fall.

Dendroica tigrina. Cape May Warbler.—Rather rare migrant. May 14 to 23. Not seen in fall.

Dendroica æstiva. Yellow Warbler.—Abundant summer resident. Arrives April 28 to May 2. Leaves very early for the south. Earliest nest with eggs, May 24, 1887.

Dendroica cærulescens. Black-throated Blue Warbler.—Rare migrant. May 1 to 14. Two seen September 26, 1891.

Dendroica coronata. Myrtle Warbler.—Our most abundant migrant warbler. April 7 to May 20; September 23 to November 1.

Dendroica maculosa. Magnolia Warbler.—Common migrant. May 2 to June 1; Sept. 12 to Oct. 5.

Dendroica pensylvanica. Chestnut-sided Warbler.—Common migrant. May 1 to June 2; September 9 to 23.

Dendroica castanea. Bay-breasted Warbler.—Rare migrant. Seen only on May 9 and 26, 1888.

Dendroica striata. Black-poll Warbler.—Rare migrant. May 11 to June 3. No fall records.

Dendroica blackburniæ. Blackburnian Warbler.—Tolerably common migrant. May 10 to 30. No fall records.

Dendroica virens. Black-throated Green Warbler.—Common migrant. May 10 to 16; September 21 to 23.

Dendroica vigorsii. Pine Warbler.—Rather rare migrant. April 14 to May 14. The only fall record is September 21, 1889.

Dendroica palmarum. Palm Warbler.—Abundant migrant in spring. April 21 to May 20. No fall records.

Seiurus aurocapillus. Oven-bird.—Common cummer resident. April 30 to October 13.

Seiurus noveboracensis. Water-Thrush.—Rather common migrant. April 30 to May 10. No fall records.

Seiurus noveboracensis notabilis. Grinnel's Water-Thrush.—Tolerably common migrant. First seen in spring, May 6. Last in fall, October 10.

Seiurus motacilla. Louisiana Water-Thrush.—Rather rare. Seen only in spring. April 26, 1890; April 25, 1891.

Geothlypis philadelphia. Mourning Warbler.—Rare migrant. May 14 to 22. No fall records.

Geothlypis trichas occidentalis. Western Yellow-throat.—Abundant summer resident. April 30 to September 28.

Icteria virens. Yellow-breasted Chat.—Rare straggler. May 30, 1889, one seen.

Wilsonia pusilla. Wilson's Warbler.—Tolerably common migrant. May 10 to 27. One September 25, 1889.

Wilsonia canadensis. Canadian Warbler.—Rare migrant. May 20, 1890; May 23, 1888. No fall record.

Setophaga ruticilla. American Redstart.—Common summer resident on the wooded islands in the Mississippi river, April 30 to September 26. Four fresh eggs, May 30, 1891.

Galeoscoptes carolinensis. Catbird.—Very abundant summer resident. April 28 to September 29. Nest with two eggs, May 17, 1887.

Toxostoma rufum. Brown Thrasher.—Abundant summer resident. April 14 to the last of September. One straggler, March 22, 1890. Nest with four eggs, May 4, 1889.

Troglodytes ædon. House Wren.—Abundant summer resident. April 14 to October 17. Nest with seven eggs, May 30, 1887.

Olbiorchilus hiemalis. Winter Wren.—Tolerably common transient in fall, rare in spring. Only four spring records. April 23, 13, 26, 30, 1888, to 1890, and 1892 respectively. Seen in fall from September 21 to November 8.

Telmatodytes palustris. Long-billed Marsh Wren.—Rare migrant. May 4, 1888; May 27, 1889; September 18, 1889.

Certhia familiaris americana. Brown Creeper.—Occasional resident, and abundant spring and fall migrant. Last seen in spring, May 10. First seen in fall, September 19. A nest containing three newly hatched young was found May 30, 1891, on an island in the Mississippi river five miles below Davenport. The nest was 15 feet up behind a loose strip of bark hanging on the side of a large dead willow stub. Both parents were seen bringing food to the young.

Sitta carolinensis. White-breasted Nuthatch.—Abundant resident. Seen building in a hole in an oak tree April 27, 1889.

Sitta canadensis. Red-breasted Nuthatch. Rare migrant. Seen mostly in fall. May 1 to 10; September 21 to October 23.

Parus atricapillus. Chackadee.—Abundant resident. Eight eggs, May 4, 1889.

Regulus satrapa. Golden-crowned Kinglet.—Abundant migrant. March 24 to May 7; September 19 to December 1.

Regulus calendula. Ruby-crowned Kinglet.—Abundant migrant. April 4 to May 20; September 18 to October 26.

Polioptila cærulea. Blue-gray Gnatcatcher.—Rare summer resident (?). Seen May 11 1889 and 1890. One was near Muscatine, 30 miles south-west of Davenport, June 19, 1890.

Hylocichla mustelina. Wood Thrush.—Abundant summer resident. May 2 to September 24. Nest with one egg, May 21, 1887.

Hylocichla fuscescens. Wilson's Thrush.—Rare. One shot June 9, 1889; another May 14, 1892.

Hylocichla aliciæ. Gray-cheeked Thrush.—Abundant migrant in spring, seldom observed in fall. April 24 to May 30. September 20, 1889.

Hylocichla swainsonii. Olive-backed Thrush.—Abundant migrant. April 24 to May 27; September 21 to October 17. Most abundant during the second week of May.

Hylocichla guttata pallasii. Hermit Thrush.—Common migrant. April 4 to May 4; September 20 to October 5.

Merula migratoria. American Robin.—Very abundant summer resident. February 17 to November 29. One was recorded January 27, 1891. Eggs, April 19, 1889.

Sialia sialis. Bluebird.—Abundant summer resident. February 4 to November 27. Five eggs, April 16, 1887.

This list contains no doubtful records, plenty of which I have. No special efforts have been expended upon the ducks, waders and game birds, hence all of my records within these groups have come in the course of my other bird studies. Attention to these groups would almost certainly considerably increase the list of species.

AUGUST AT LAKE TAHOE.

BY ESTHER CRAIGMILE.

Lake Tahoe is situated in the obtuse angle which forms the western boundary of Nevada, so it is the property of California as well. It has an altitude of 6200 feet and is surrounded by mountains. It is twenty-three miles long, thirteen miles wide, and of a great depth. The Nevada side is mostly barren, but the California region is rich in yellow pine, tamarack, balsam, alder, aspen, and willow. Goldenrod, asters, and sunflowers bloomed almost as profusely as in Illinois in the fall. Manzanita, buckthorn, elder, wild goose-berry, and numerous shrubs unkown to me covered the mountains. Bird life was abundant on land and water.

The White-headed Woodpecker is said to be a silent bird, but he attracted my attention first by drumming on a tree trunk; then he flew, giving a rattling call like the Hairy. He was usually quiet in feeding, but more or less noisy in flight.

California Poor-will does not believe in corporal punishment, so he omits the first syllable of his song and gives the middle west people a feeling of something incomplete.

The trees were so large that many gleaners could work without molesting each other. A White-headed Woodpecker, two Red-breasted Sapsuckers, and a Slender-billed Nuthatch were seen feeding contentedly on the same tree. It was not uncommon to see three or four Sierra Creepers climbing a tree in regular procession. The last one seemed to find plenty to satisfy his hunger, too.

One day I saw a creeper and a nuthatch banqueting from the lumber of which the new car shop was constructed.

Cliff Swallows had hundreds of nests along the high banks of the lake. A few preferred to build under the eaves of the store which was built on the wharf. Hummers were omni-

present. They were usually too hurried to foster careful observation.

The Green-tailed Towhee, with his long tail, his unexpected crest, his spotless throat, and cat-like "mew" was one of the camp delights, together with the friendly Black-headed Grosbeaks who gathered crumbs from the camp stove, the noisy Blue-fronted Jays who disputed with the dog and chipmunk the right to the scraps, and the social Chickadees who conversed with us on all occasions.

Pileolated, Macgillivary's, and Myrtle Warblers were abundant. The first two were so similar to Wilson's and Palm of Illinois.

Belted Kingfisher, Spotted Sandpiper, Hammond Flycatcher, Western Gull, Mountain Bluebird, Slender-billed Nuthatch, Cliff Swallow, Western Chipping Sparrow, Cabanis Woodpecker, Western Robin, Arkansas Goldfinch, Rufous Hummingbird, Brewer Blackbird, Red-shafted Flicker, Blue-fronted Jay, Sierra Junco, Thurber Junco, Black-throated Gray Warbler, Mountain Chickadee, Nighthawk, Desert Sparrow Hawk, Green-tailed Towhee, Hermit Warbler, Yellow Warbler, Killdeer, Louisiana Tanager, Black-headed Grosbeak, Great Blue Heron, Sierra Creeper, American Bittern, Canada Goose, White-headed Woodpecker, California Poor-will, Plumed Partridge, Warbling Vireo, Pacific House Wren, Western Golden-crowned Kinglet, Pileolated Warbler, Barn Swallow, Red-breasted Sapsucker, Mountain Song Sparrow, Myrtle Warbler, Audubon Warbler, Macgillivray Warbler, Cassin Purple Finch, House Finch, Townsend Fox Sparrow, Olive-sided Flycatcher, Western Wood Pewee, Western Lark Sparrow, Cassin Vireo, Pacific Yellow-throat, Townsend Solitaire, Turkey Vulture, Scoty Grouse, Lazuli Bunting, Calliope Hummingbird, Williamson Sapsucker, Ruby-crowned Kinglet, Western Red-tailed Hawk, Red-breasted Nuthatch, Black-crowned Night Heron, Allen Hummingbird, Western Meadowlark.

A HAMMOCK LIST OF SPARKS, NEVADA.

BY ESTHER CRAIGMILE.

Early in May I arrived in this pioneer town among the Sierras. It is located in a valley fifteen miles square, through which flows the rockyTruckee river. The whole region had been an alkali desert, but the presence of irrigation has transformed it into a rich farming region. Trees are not common. A few willows grow along the irrigation ditches, and Cana-

dian and Lombardy poplars are seen around some of the farm houses. Orchards are few. The mountains surrounding the town are so barren that sage brush thrives in few places.

Little rain fell during the three months covered by these observations. The temperature varied from freezing at night to 135 on the warmest days. With the exception of one half-day tramp across irrigated fields to Governor Sparks' gold mines, and one all-day drive through the foothills, the list was compiled from my hammock under the cottonwoods. An irrigation ditch, an orchard, and a row of tall cottonwoods attracted the birds to my locality.

Linnets (House Finch) were abundant and were as much of a nuisance as Passer domesticus. They reminded me of the uncouth country cousin of the refined Purple Finch. The Ash-throated and Hammond Flycatchers were omnipresent. The note of the latter resembles that of the Nighthawk, only it is more refined. The Ash-throated Flycatcher is a handsome bird. At first I pronounced him a quiet fellow as he gleaned insect food from his perch on the telephone wires, but later I discovered that he was the night musician who roused me about 2 o'clock with his chatter-box gabble, "tick, tick, tick, tick-ik, ik, tick-ik, ik, tick-ik, ik," frequently repeated for several minutes. This serenade seemed to accompany some peculiar flight. When the young were learning to fly the whole family arranged themselves on the wires and such "ticking" as followed could hardly be surpassed by a whole roost of Night Herons.

Insect life was abundant, and so were Nighthawks. Although the light was very brilliant they frequently fed until nearly noon. They slept on exposed branches of the cottonwoods and on fence posts along the road where there were no trees. Their "beady" note might be heard any hour of the day. Their rest seemed never quiet. The list follows:

Bullock Oriole, House Finch, Western Robin, Mountain Song Sparrow, Western Meadowlark, Yellow Warbler, Mountain Bluebird, Killdeer, Mourning Dove, Western Chipping Sparrow, Barn Swallow, Ash-throated Flycatcher, Brewer Blackbird, Cliff Swallow, Pacific Yellow-throat, Spotted Sandpiper, Brewer Sparrow, Red-shafted Flicker, Hammond Flycatcher, Black-billed Magpie, Bicolored Blackbird, Warbling Vireo, Arkansas Goldfinch, Western Meadowlark, Rock Wren, Western Lark Sparrow, Dusky Horned

Lark, White-rumped Shrike, Lazuli Bunting, American Bittern, Belted Kingfisher, Yellow-headed Blackbird, Western Gull, Turkey Vulture.

NOVEMBER ASPECTS IN SPOKANE COUNTY, WASHINGTON.

BY W. LEON DAWSON.

The city of Spokane, now boasting some 75,000 inhabitants, is situated in a region of peculiar interest to the student of Washington birds, and as yet very little has been published relating to the ornithology of this northeastern section. The interest is largely due to the still undefined Rocky Mountain element in the avifauna of Spokane County; and the scarcity of published material is my only excuse for presenting the following meager notes, gathered at random during what is possibly the dullest month of the year, November. Four weeks spent in the "Imperial City" allowed the writer three Saturday half-holidays at nearby resorts, and occasional glimpses besides of the birds about town.

The country immediately surrounding Spokane consists largely of lava benches and ridges, covered with a light growth of yellow pine, and is further diversified by several deep-cut river beds. Upon the east its timbered hills connect with the mountain system of Idaho; while upon the west its gentler slopes are largely surrendered to the plow. In the city itself, Corbin Hill, with its handsome residences and its artistically neglected corners, affords asylum to many species of birds; and very commendable attention is being paid, not only here but elsewhere in town, to the summer housing and the winter feeding of the gallant Troubadours.

Blinding frosts, occurring regularly through the month, have warned away the less hardy birds, while the almost constant sunshine of the middle day has rewarded the sturdier sort who stay. No premature outburst of cold has occurred to drive in the regular winter pensioners from the north,—the Snowflakes, the Bohemian Waxwings, and their ilk,—but as I write, on the 25th, the snow is falling and the official change from

fall to winter is being recorded. The altitude is 2,000 feet, so we are on the normal snow line for the season.

1. **Lophodytes cuculatus.** Hooded Merganser.—One seen in Medical Lake.

2. **Mareca americana.** Baldpate.—Little Medical Lake. The commonest market bird at this season.

3. **Clangula islandica.** Barrow's Golden-eye.—A flock of a dozen males and another of three females on Little Medical Lake.

4. **Ortyx virginianus.** Bob-white.—Two large coveys seen near town. Said to be thoroughly established hereabouts.

5. **Buteo borealis calurus.** Western Red-tail.—A small bird with an unusually stiff, sluggish flight was repeatedly flushed from the tops of pine trees near Little Medical.

6. **Bubo virginianus saturatus** (?). Dusky Horned Owl.—Only one seen. Not common.

7. **Ceryle alcyon.** Kingfisher.—Two flying about Hangman Creek, Nov. 4th.

8. **Dryobates pubescens homorus.** Batchelder Woodpecker.—One seen. The pure whites of this bird are strikingly noticeable as compared with **D. p. gairdnerii** found further west.

9. **Colaptes cafer collaris.** Red-shafted Flicker.—Common. Have seen a dozen at once. And still the uncircumcised call him "Yellow-hammer."

10. **Otocoris alpestris arcticola.** Alaska Horned Lark.—A close study of a dozen individuals has left no question as to the prevailing form. These birds have evidently displaced **O. a. merrilli** for the winter.

11. **Pica pica hudsonica.** Black-billed Magpie.—Common. They wander about the country in loose companies containing a score of birds apiece, but persecution has taught them great discretion, and one hears oftenest the subdued query and comment of invisible birds.

12. **Nucifraga columbiana.** Clarke's Nutcracker.—Two seen in Minnehaha Park.

13. **Sturnella magna neglecta.** Western Meadowlark.—Two seen near Lark Street, on the 20th.

14. **Euphagus cyanocephalus.** Brewer's Blackbird.—One flock encountered near Little Medical Lake on the 11th.

15. **Hesperiphona vespertina montana.** Western Evening Grosbeak.—The Coccothraustine yell, unmistakable to the initiated, was once heard on Carnon Hill, Nov. 20th.

16. **Loxia sp.** A few Crossbills were seen flying about in a snowstorm, Nov. 25.

17. **Acanthis linaria.** Redpoll.—Not yet common.

18. **Astragalinus tristis pallidus.** Pale Goldfinch.—A troop seen Nov. 4th were feeding upon fallen sunflower seeds. The colors

of the plumage appear sharp-cut and fresh. The wings and tail show much pure white, and the yellow proper is now confined to the throat and sides of head and neck.

19. **Passer domesticus.** English Sparrow.—A very quiet resident. The hoodlum evidently recognizes the fact that he is still in the minority and deports himself accordingly. A number of the local bird-lovers are unaware of his presence in the city.

20. **Junco sp.** Heard repeatedly but not seen, at Silver Lake.

21. **Melospiza cinerea montana.** Mountain Song Sparrow.—It may be counted presumptuous to enter the lists of the trinomialists armed only with a pair of binoculars, but I was instantly impressed with the differences of a Song Sparrow seen on the 4th at Garden Springs. In this bird the general tone of coloration was much lighter than in typical **merrilli**, with which I had abundant opportunity to compare it a moment later. Its ashy gray and brown of head contrasted strongly. The ashy of back and scapulars was very extensive, the brown areas of the feathers occupying not above **one-third** of the total space. Under-parts clearer white; streaks lighter rusty and more sharply defined, more narrow on sides than in **M. c. merrilli.**

22. **Melcspiza cinerea merrilli.** Merrill Song Sparrow.—The common bird, reputed to be sparingly resident throughout the winter.

23. **Lanius borealis.** Northern Shrike.—Heard near Medical Lake.

24. **Dendroica auduboni.** Audubon's Warbler.—Two birds were seen lingering about a pleasant orchard near the bank of the Spokane River, Nov. 20.

25. **Cinclus mexicanus.** Water Ouzel.—A pair were seen splashing about unconcernedly at the brink of one of the local waterfalls, those Samsons which are grinding out flour and power in this prison house of Spokane's prosperity. These romantic watersprites seemed singularly out of place amidst the prosaic brulling of turbines and rollers—like "poor Lo" trudging bare-footed and awe-stricken beneath the skyscrapers. But also, like the Red man, the Ouzel was "here first."

26. **Certhia familiaris montana (?).** Rocky Mountain Creeper.—One specimen heard and seen on a pine-clad hillside at dusk.

27. **Sitta carolinensis aculeata.** Slender-billed Nuthatch.—A very contented dweller in pine trees, usually found associated with its congeners.

28. **Sitta canadensis.** Red-breasted Nuthatch.—Fairly common, occurring singly or in pairs as often as in the troupe.

29. **Sitta pygmæa.** Pygmy Nuthatch.—Strictly social in its habits: its twitterings are a pretty sure sign that you have come upon the main army of minute bug-hunters, for which you may have been searching diligently for the past hour and more.

30. **Penthestes atricapillus septentrionalis.** Long-tailed Chickadee.—Perhaps the birds seen really belong to the Columbian "island" of **atricapillus** proper, but they appear to me lighter in tone, with more of white edging on wing and tail.

31. **Penthestes gambeli.** Mountain Chickadee.—Active members of the Amalgamated Push.

32. **Regulus satrapa olivaceus.** Golden-crowned Kinglet.—Not so common as on Puget Sound. Only once seen, on a densely thicketed hillside.

33. **Merula migratoria propinqua.** Western Robin.—Several lingering about the orchards and shade trees of Cannon Hill.

34. **Sialia mexicana occidentalis.** Western Bluebird.—Still common locally; a dozen seen Nov. 20th. These birds are undoubtedly intergrades and possibly deserve to be classed as **S. m. bairdi.**

Seattle, Wash.

THE YELLOW-BREASTED CHAT IN MICHIGAN.

P. A. TAVERNER.

Southern Michigan marks the extreme northern limit of the range of the Yellow-breasted Chat in the Middle West. They can hardly be regarded in the state as common or regular visitors, except locally. They must be viewed as intrusive forms from the Carolinian Fauna to the south of us that have, for the past decade or so, been extending their range northward. In the past, they have appeared here occasionally under peculiar and, as yet, unknown conditions, persisting for a while, and then vanishing more or less completely for a greater or less period of time.

The causes of these intrusions and disappearances are still beyond explanation. They seem to come and go according to no law, rule or set of conditions. That they are but accidental and the result of chance no scientific man will for a moment admit; but the complexity of the conditions renders the solution very difficult indeed. In many cases, such investigation involves an exhaustive study of the conditions prevalent over the winter ranges of the individuals in question; and until we have positive data regarding where the different individuals of the various northern races spend their winters we cannot hope for any great success along these lines. It may be well to call attention to the fact that these occurrences

have not taken place as isolated phenomena, but have generally been accompanied by the intrusion of other species that may or may not have been caused by the same set of conditions. Prominent among these contemporary incursions, in this section, has been the spread of the following species,—Lark Sparrow, Grasshopper Sparrow, Dickcissel, and Cardinal. Some of these have formed permanent residences, but others, notably the Dickcissel, have, after a short persistence, vanished again completely. In this latter case the extinction seems to have been more general than with the rest and may possibly have been caused by hostile influences in the southern ranges.

The data upon the Yellow-breasted Chat in Michigan is not very voluminous, but as a matter of record it may be well to place what can be gathered in an enduring form for the benefit of further workers. In the compilation of the following I have been assisted by the various people whose names I mention below. To these and to Dr. Ned Dearborn, Mr. Ruthven Dean and Prof. W. B. Barrows, who has kindly assisted me with the benefit of the notes he has gathered on the subject, I must extend my sincere thanks for their coöperation.

The first record of the bird's occurrence in the state that I can get track of occurs in Gibb's MS. of 1881, in which the following note occurs: "*Icteria virens*. First taken Aug. 12, 1876, quite common until Oct. 2, '76, and not seen since.—Dr. Atkin's MS. Birds of Ingham Co." Unfortunately the MS. of the late Doctor has completely disappeared, and this is the only authoritative record of his that we have on this subject. Prof. A. J. Cook had access to it when he wrote his Birds of Michigan in 1893, and he quotes the following : "Exceedingly rare, occasionally quite common" (Dr. Atkins). However, the many misquotations in this work throw doubt upon all the rest that cannot be confirmed through other sources, and render complete acceptance dangerous.

The next observations on the species were made by Jerome Trombley, of Petersburg, Monroe County, who found the birds, and took two nests, May, 1877, one of which, dated the 26th, is now in the Museum of the Agricultural College. Of

these Mr. Trombley writes me: "These nests were all taken by me in the same locality, and were the only birds seen that year, and were the first Chats I ever saw here. After 1877, and until 1881, a few individuals were occasionally seen every year. After 1881, for a few years, they seemed to have decreased, so much so that I failed to detect any in their old haunts." In 1894 the same observer took two birds, May 3 and 17, as is recorded in Butler's Birds of Indiana, and the following month, in company with Mr. A. B. Covert and Dr. Robt. H. Wolcott, the writer found several pairs on the edge of a black ash swamp about four miles south of Ann Arbor, Washtenaw County. Three or four birds were taken in this instance and the following year they were found breeding in the same locality by Prof. D. C. Worcester and Mr. Covert, and the nest, eggs and the parent birds were taken, collected and deposited in the Museum of the University of Michigan. Since then, they have not been seen in this locality.

Mr. Swales, in his List of The Land-birds of South-eastern Michigan Bull., Mich. Ornith. Club, V. p. 40, records two nests of the bird in Wayne County, both at Grosse Pointe, dated May 29, 1898, and May 30, 1903, taken by W. A. Davidson and Chas. E. Wisner respectively. Sept. 28, 1904, I heard a bird whistling in some dense shrubbery to the north of the city of Detroit. The most diligent work failed to discover sight of the vocalist, but I had no difficulty in recognizing the voice of the Chat. Had this been the only record of the bird's occurrence here I should hesitate to record it here as such. Subsequent developments, however, substantiated the identification and renders the conclusion safe. May 20, 1905, I heard and saw one bird near the same place, and again, on the 23d, when I saw several, but failed to secure any specimens. Subsequent efforts in the same locality on June 4 and 24, and July 1 and 4, proved equally futile and they baffled all the efforts of Mr. Swales and myself, though we saw the birds often and positively identified them. There were at least three pairs in the vicinity and probably more. At the time of the last date their song season had passed and the birds were so quiet that it was impossible to find them and we had to give up the attempt for the season.

Strangely enough, on the same date that I found the first one this year (May 20), Mr. Swales and Prof. Barrows heard sounds that they were very sure came from the bird on Chandler's Marsh, Ingham County. Prof. Barrows is well acquainted with the species from experience with them elsewhere, and Mr. Swales had just returned from Point Pelee, Ont., where he became acquainted with their eminently characteristic calls. He afterward studied them on the above mentioned occasions and is well satisfied as to the correctness of the first supposition.

Mr. Trombley, under date of July 12, 1905, tells me, "A pair nested here (Monroe County) last year. It does not apparently gain or decrease in numbers." And again, "I regarded the Chat, at my first discovery, in 1877, as purely accidental, at the time, but subsequent observation leads me to think that it will be found sparingly in Monroe County every year, were all the localities carefully searched that are favorable to it. Of late years, I have noted it several times and I have come to regard it as a rare but regular summer resident of Monroe County."

In the adjoining territory to Michigan some interesting data is to be gathered.

In Ohio, Prof. Lynds Jones, Birds of Ohio, lists it as a common bird in the southern counties of his state, but becoming less so to the north until it becomes almost rare on the Lake Erie shore.

Across the Lake at Point Pelee, Ont., Mr. W. E. Saunders found it in 1884, and in May, 1905, he, together with Mr. Swales and the writer, found several pairs there.[1]

In Indiana, Butler lists it as common in the southern parts of the state to rare in the northern sections, and adds, "Prior to 1893, it was unknown in the north-western part of the state, and the same may be said along the northern boundary in both Indiana and Michigan." From the data I have from Illinois about the same conditions have prevailed. It seems to have appeared about Chicago in 1894; since then it seems to have been a more or less regular summer resident, especially in the Calumet region and about the Skokie Marshes, but not regularly common and rather local.

Kumlien and Hollister record it as a regular summer resident in the southern part of Wisconsin, where it breeds in favorable localities rather commonly. They neglect to state how long it has been so, but it has probably come into this state at a comparatively recent date as it has in the adjoining ones.

A comparison of the foregoing leads one to the conclusion that the extension of its range about 1893 and '94 was of pretty general distribution, and must be referred to general and not local conditions. In most places it now appears to have made almost permanent settlements and we can hope that this species will become firmly settled and form a welcome addition to our avi-fauna.

[1] Since writing the above. Dr. Wm. Brodie, of Toronto, writes me that he met with an individual of this species on Point Pelee in July, 1879. He examined the dead bird in the flesh, so there can be no doubt as to the identification.—P. A. T.

A TAGGED FLICKER.

Readers of the ornithological magazines may remember a scheme proposed by the writer a couple of years ago for tagging birds for the purpose of studying migration. The idea was to put aluminum bands upon the tarsi of nestlings and all other birds it was possible to capture. These bands were to be inscribed with a number, and the words "Notify the Auk, N. Y." For the last two summers I have been doing this on every occasion and have been furnishing others with the materials for following my example. Strict notes have been kept in regard to each tag used, and this winter, the first fruit of the work has been reaped.

May 29, 1905, Mr. Chas. Kirkpatrick attached tag No. 123 to the leg of a half-grown Flicker at Keota, Keokuck County, Iowa. Christmas day this bird was shot by Mr. J. E. Ross, of Many, Sabine Parish, La., about six hundred and fifty miles south of the breeding grounds. The bird was not saved,[1] unfortunately, but I have positively identified the tag used, so there can be no doubt as to the accuracy of the record. This gives us, I think, the first absolute data on the extent of the individual migration of this bird, and as such, is of much in-

terest. If the bird had been saved, it would have been extremely interesting as a specimen of known age, developed under natural, wild surroundings. Data on this subject is extremely rare and most valuable from a plumage standpoint.

There are many other birds whose tagging would probably lead to interesting results. Bobolinks, from the fact that so many are killed in the southern rice fields, would be apt to turn up again, but are difficult to discover in the nest or to catch when adult. Perhaps one of the most fruitful fields would be among the gulls and terns where they nest in numbers. A nesting place visited, it is easy to tag many of the young, and they are also so often shot by would-be-sports and others that there would be fair chances of their being taken again in other parts of their range. A few chickadees so decorated would likely solve the question whether they migrate in the winter or not. Careful trapping in the shrubbery about the house might show whether the same birds migrate over the same path year after year or not. In fact there seems to be no other field that promises such important results with so little hard work as this does, and it is one that almost any one can do. I should like to see the corps of bird-taggers enlarged this year. If any of these readers hear of any bird being taken with the tags upon them I hope they will make every attempt to save the bird, or as much of it as possible; a wing or a head is often sufficient to identify the specimen, and forward the same to me at once. P. A. TAVERNER.

[1] Since writing above the writer has received a part of wing of this bird.

SPECIAL INVESTIGATION.

Accompanying this number of the Bulletin are copies of blanks calling for investigation upon the breeding habits of any and all of our birds. More of these blanks can be had upon application to Frank L. Burns, Berwyn, Pa., or Lynds Jones, Oberlin, Ohio. You are urged to keep one of these blanks where it will attract your attention each day, and to answer one or more of the questions which it asks you. The list of points has been made rather extensive not in the expectation

that any one person will be able to fill all of the spaces for a single species, but rather in the hope that you may find some point upon which you can give information. Any information at all relating to any species of our birds will be received with thanks and will be used somehow in the final report. Please do not neglect to return these blanks because there does not seem to be enough upon it to pay for the postage. If there is anything at all upon it let the compiler judge of its value. One question answered is well worth while.

Mr. Frank L. Burns has kindly consentel to undertake the study of the life history of the Broad-winged Hawk, with your coöperation. He desires information past, present, and future concerning this species, upon all aspects of its life. The accompanying blanks for breeding notes can be used as far as they go in giving the life history of this hawk. You will confer a lasting favor upon Mr. Burns and upon the science of ornithology if you will not allow this appeal for notes to grow cold and so finally entirely escape your mind. Send him what you have now.

THE WILSON BULLETIN.

A Quarterly Magazine Devoted to the Study of Living Birds. Official Organ of the Wilson Ornithological Club.

Edited by LYNDS JONES.

PUBLISHED BY THE CLUB, AT OBERLIN, OHIO.

Price in the United States, Canada and Mexico, 50 cents a year, 15 cents a number, postpaid. Price in all countries in the International Postal Union, 65 cents a year, 20 cents a number. Subscriptions may be sent to Lynds Jones, Oberlin, Ohio, or to Mr. Frank L. Burns, Berwyn, Penn.

EDITORIAL.

The editor has received clippings from numerous papers which indicate clearly that there are many alert students who are doing good service in their own localities. It is not always possible to acknowledge receipt of such remembrances, but the sender may be certain that the editor appreciates these tokens, and is always pleased to receive them.

The field work which is just now suffering to be done is that relating to the life of the birds. There is no lack of systematists and bibliographers and students of color patterns, all of whom have their places in any study of the birds, and there are hosts of those who enjoy the birds and are enthusiastic in their quest for new fields where new forms may be added to their acquaintance list. but the dearth of those who are making a careful and systematic study of the life of even a single species is all too apparent. The blanks which accompany this number are an earnest appeal to all to enter this field even though your foot never leaves the margin. It is a broad field, and no one can hope to cover all of it, but to be discouraged by its breadth would be like refusing to taste of the delicious strawberries in a large field because you could not hope to eat all of them! The pleasures to be found in this field of bird study are just as certain as any, and promise larger returns.

The flight of Snowy Owls, which has reached considerable proportions in the eastern and middle sections of the country during the past winter, when taken in connection with the phenomenally warm, snow-free winter, assumes a character of great significance.

It is also true that in most sections of the country there has been a dearth of bird life in general which has caused universal remark. Speaking for northern Ohio, I have been unable to discover any unusual food conditions which might explain the appearance of the owls or the scarcity of other birds. No doubt the influx of owls was but an unusually marked symptom of a similar southward movement of practically all birds which habitually spend the winter months in ice bound parts of the country. If all indications are not deceptive on this point we shall have to look again for the explanation of these southward flights. It is interesting to notice that these southward flights of the Snowy Owl, the Hawk Owl, the Pine Grosbeak, the Redpoll, and the White-winged Crossbill, not to prolong the list, do not seem to have any connection with each other. In other words, the influences which seem to be acting upon one of these species to bring about a southward winter movement many not affect the others at all. Reports from southern Ontario indicate that there has been no unusual movement of the owls there the past winter, while at places a hundred or more miles south of Ontario the number of specimens captured and seen was sufficient to cause general remark. Were the conditions in northern Ontario, or even farther north, particularly unfavorable for passing the winter, or were the central districts into which the birds passed unusually favorable, or were both of these influences combined? It is an enticing subject for practical field work. Its solution is entirely possible.

GENERAL NOTES.

A Vulture Pie.—Of all the gastronomic stunts performed, the record was completely shattered in this county last summer. A resident of Atglen, possessing much better markmanship than judgment, and no respect at all for some of the laws of the commonwealth, came into town with a mixed bunch of birds, the largest a specimen of the Turkey Vulture. Being utterly worthless to him he very kindly (?) presented them to an Italian working on the "Low Grade Freight Line." The dago proudly carried the string to his boarding house shanty. The Vulture, being the largest, was naturally considered the prize, so it was cleaned, and stuffed with plenty of garlic, and the entire household proceeded to make a meal of it; with the result that all were made deathly sick. The next day one of the participants gravely observed to the donor: "Big bird no good!" He didn't seem to appreciate his blessings!

Frank L. Burns, Berwyn, Pa.

Red-throated Loon at Grassy Sound, N. J.—A most interesting New Jersey record is that of a Red-throated Loon (*Urinator lum-*

me), June 15, 1904, at Grassy Sound. It was shot, after diving and dodging several bullets, by a Mr. Stanart, a local gunner of that place, and secured by Mr. C. N. Cass, to whom I am indebted for the skin. Mr. Cass removed the skin the same day the bird was shot, fearing it would spoil. Unfortunately the body was not sexed. As far as known this is the latest summer date for Southern New Jersey, where the species occurs rarely.

FRANK L. BURNS, Berwyn, Pa.

THE OPENING OF THE 1906 SPRING MIGRATION AT OBERLIN, O.—Following an almost record-breaking winter for both temperature and for snowfall, the spring migration opened in February with the appearance of migrating individuals of Robin, Bluebird, Meadowlark, Killdeer, Bronzed Grackle and Canada Goose. There was a slight increase in the number of individuals of each species except Killdeer and Canada Goose, which culminated on the 24th, when Robins, Bluebirds, Meadowlarks and Grackles were fairly common, and Red-winged Blackbirds arrived. The cold wave which began on the 5th checked any further advance, and reduced most of the birds to winter conditions again. On the 26th geese were seen returning southward. Neither frogs nor salamanders were heard piping, but some insects came out. This is the earliest wave of migration which has been recorded for Oberlin. LYNDS JONES.

HERMIT THRUSH IN WINTER.—On December 8, 1905, while working through the woods near the head of Belle Isle, Detroit river, I met with a bird of this species. This bird was evidently in good condition, and during the time that I watched him, was tripping over the dead leaves in a very lively fashion. He was not at all shy, in fact was much less so than the species generally is. The day was a pleasant, bright one, but during the week before (Nov. 29-Dec. 4) we had the most severe weather of the winter, the temperature falling as low as 17° on the 30th, with about an inch of snow on the ground on Dec. 2. This is the first record known to me of the occurrence of this species here in winter.

BRADSHAW H. SWALES, Detroit, Mich.

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Figure 1.

Roseate Tern (Sterna dougalli) Juvenile Plumage.
Photo by Lynds Jones.

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A CONTRIBUTION TO THE LIFE HISTORY OF THE COMMON (*Sterna hirundo*) AND ROSEATE (*S. dougalli*) TERNS.

BY LYNDS JONES.

THE COMMON TERN.

We are more indebted to Mr. George H. Mackay than to any one other person for what is known of the life history of this tern, as well as of the life history of the several species of the gulls and terns which breed on the coast of Massachusetts. Mr. Mackay's extended studies have appeared in volumes 12 to 16 inclusive of The Auk. I shall not repeat the points in the life history of this species which he has fully covered, but attempt to supplement what he has given, and to indicate changes in habits where they may have occurred in the interval between his studies and mine.

The studies upon which this paper are based were carried on during parts of the summers of 1903 and 4, with Woods Hole, Massachusetts, as a base of operations, and with all of the facilities of the Marine Biological Laboratory, and the United States Fish Commission at my command. To the directors of these two institutions my thanks are heartily tendered.

From July 8 to August 14, 1903, and from June 28 to August 12, 1904, the terns were under almost constant observation. Intensive studies were conducted at the Woepecket islands and on Muskeget island. The colonies on Penikese and

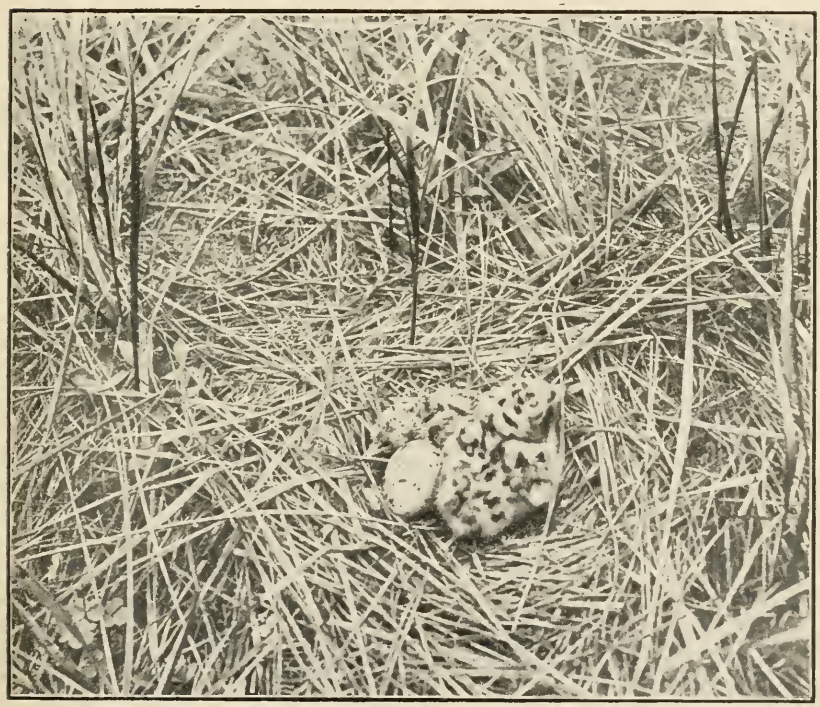
on No-mans-land islands were visited several times where comparative studies were made. Three visits to the colonies on the three Chicken islands and on North Harbor island in Lake Erie, enabled me to compare marine and inland colonies.

Muskeget island is typical of the low sandy islands to which the Woepeckets and a part of Tuckernuck belong. Such islands are covered with a growth of bunch grass and poison ivy, and with other vegetation of less consequence and relatively slight in quantity. The bunch grass forms dense masses in some places, but in others is in scattered bunches, and there are areas of some extent devoid of any vegetation. The broad beach is either sandy with few or no stones, or composed of boulders ranging from the size of pebbles to several tons in weight. Driftwood and sea weed are found everywhere. Penikese island is typical of the high islands which are covered with a strong turf with little or no other vegetation except on the islands of large area where forests maintain themselves with all the attendant vegetation. Of course the terns and gulls frequent only the borders of forest covered islands, and in the vicinity of Woods Hole are largely confined to Penikese, No-mans-land, and the outlying parts of Martha's Vineyard at the ocean end of Katama Bay.

Mr. Mackay states that but one brood is reared in a season. There is good evidence for believing that two broods are raised by a considerable proportion of the Common Terns. About June 10th nests with eggs are the most numerous, according to Captain Gibbs of the Life Saving Station on Muskeget island, and also Special Policeman Small of the same island. Also according to these gentlemen, there is a second maximum time for eggs, which occurs about July 10th. My observations corroborate this view. Upon my arrival on June 28, 1904, very few nests containing eggs were to be found, while two weeks later nests with eggs were found everywhere.

Mr. Mackay records very few nests containing 5 eggs, and inclines to believe that in exceptional cases one bird may have deposited all five eggs. I found three nests which contained 6 eggs, and a considerable number which contained 5. In every case where the nest contained more than 4 eggs it was

clear that two females had laid to the same nest. This was proved by the marked difference in the degree of incubation of two or three of the eggs from the rest in the nest, or by the marked difference in size and markings and texture of the shell. In a relatively small proportion of cases nests containing four eggs were clearly mixed sets. While many nests contained but one egg, I never met with a case where the single egg could be regarded as a nest complement. Either another or other eggs were laid in the nest later, or the nest proved to be deserted, or the egg was infertile and remained after the others had hatched. The usual number of eggs or young was



COMMON TERN. (Sterna Hirundo.)
Egg, Young Just Hatched, Young Two Days Old.
Woepecket Id., Mass.

three, but there were many nests with two eggs or young, and a somewhat smaller number with four eggs or young.

Contrary to many statements, I have never met with a case of no nest material in the case of this tern. A freshly made nest is usually a well constructed cup of dry grass, or dry drift seaweed, or other dry trash, arranged loosely in a depression in the sand, on drift seaweed, or among the beach pebbles or stones. The material is definitely arranged and pressed down to smoothness by treading and by pressing the breast against the nest material. Exposed nests are pretty certain to have most or all of the nest material blown away before the chicks leave the nest.

Nests are placed practically anywhere on the ground. The sandy beaches as well as the gravelly and stony exposed beaches are occupied, but there seems to be a marked tendency for the birds to prefer the upper reaches of the islands, placing the nests among the grasses and bushes and vines, but without attempts at concealment. On the Woepecket islands, however, where great boulders of several tons weight are scattered along certain parts of the beach, several nests were found beneath these boulders, or even placed well back in crevices or littles caves. The birds seem to demand a fairly broad outlook from the nest. The upland parts of Penikese island are covered with a strong turf which supports a luxuriant growth of grass. Among this grass the terns' nests are often raised from the ground by the thick matting of last year's growth.

Mr. Mackay states that wherever the nest may be placed the tern selects material which harmonizes with the surroundings. I have not found that to be true in enough cases to indicate any suggestion of intelligence on the part of the bird. Nests placed among the rubble of the beach are hard to see because the eggs resemble the pebbles, making the nest appear to be a wisp of drift. Nests placed on the light gray sand or grass are conspicuous objects, since both nest material and eggs form a strong contrast with the surroundings. It would seem, therefore, that the upland and sandy reaches nesting habit was a late acquisition, and that the birds have not yet fully adapted

themselves to the different environment which these places afford.

The eggs are generally deposited on successive days, rarely a whole day intervening between the deposition of two eggs. Incubation begins when the first egg is deposited, and the eggs hatch in the order in which they were deposited. The period of incubation for six nests studied was 21 days, or the same as for the domestic fowl.

Both male and female take regular turns sitting, but my observations indicate that the female spends more time on the nest than the male. In the cases studied, a bird later found to be the female, approached the nest abruptly and settled upon the eggs without any preliminaries. She remained quiet 40 minutes, when she uttered a peculiar call which was repeated at short intervals until a bird separated itself from the hovering cloud, or company at the water's edge, when she stood up, took a few steps, and flew away. The male alighted on the sand several rods to leeward of the nest and approached it gradually, simulated feeding, and called loudly at intervals. When he reached the nest he merely stood over the eggs to protect them from the scorching rays of the sun, and kept calling at intervals. In 20 minutes he became more restless, called more frequently, and soon ran some distance to windward of the nest and took wing. Within a few minutes the female alighted on the sand near the nest and went abruptly to it and settled upon the eggs. This maneuver was repeated many times, with slight modifications. Upon the slightest disturbance the birds leave the nest and circle about overhead, calling excitedly and loudly, often making sallies at the head of the intruder. At first it seemed impossible to select the parents from the other scolding birds which constantly hovered over me, and since one can seldom find a nest which is sufficiently isolated to enable one to concentrate attention upon it alone, there might well be confusion as to the owners of any given nest. But with the young the case is more definite. When a young bird is picked up, two of the hovering birds become much bolder than the rest, dashing within a few feet of the intruder. After considerable careful study it became

evident that while there is always a community of interest in the whole colony the aggressive protest against the intruder is confined to the birds immediately interested. In cases of doubt as to whether the nest under observation was that of *hirundo* or *dougalli* it was only necessary to remain quietly near the nest until all but one or two of the birds tired of the demonstration of hostility. The female was invariably the more aggressive.

Not much of the incubation of the eggs is left to the heat of sun and sand, but the birds brood almost constantly. Eggs left exposed to the sun for any considerable time die. A large number of eggs do not hatch. Some are evidently infertile, but many die from lack of proper care. Incubation evidently begins when the first egg is laid.

The first feather rudiments appear as little swellings upon the skin surface on the fifth day of incubation. By the tenth day they have greatly elongated and turned backward to lie parallel to the skin surface, many of them being pigmented. These rudiments of the first or nestling downs appear first on the tail, then successively forward to the forehead along the feather tracts, except that in the region of the large wing feathers they begin to appear at about the time when those on the lower back are first seen. On the 18th day of incubation the down feathers in the region of the outer primaries begin to show enlarged bases beneath the skin. These enlargements are the beginning of the future juvenile flight feathers. When the bird hatches its down feathers are unexpanded and look like wet hairs plastered against the skin. They remain in this condition during the first day after hatching, but on the second day the enclosing sheath dries and splits and the liberated and dried down barbs expand and cover the skin surface with a soft, fluffy plumage. On the third day after hatching the flight feathers appear at the surface of the skin and in their further growth push the down feathers out of their pockets. At first the new feather is enclosed by a horny sheath which keeps it in the "pin feather" form, with the tuft of down sticking to its pointed tip. In three or four days the horny sheath dries and splits away from the tip and the new feather flattens out into

a perfect feather. The down is seen to form a fringe along the tip of the flattened feather (Fig. 3), each down barb being attached to one or more of the barbs of the new feather. This down fringe wears off rapidly on all exposed parts, but is sometimes found in protected places on young birds some days after they begin to fly about. The young bird can fly feebly by the eighth day after hatching.

Figure 3.

Juvenile definitive feathers of *S. hirundo* with down barbs attached to their tips.

The embryo, on the 18th day of incubation, lies doubled up in the egg, with the head turned under the body resting on the abdomen, just in front of the elongated yolk sac. The bill is thrust between the right knee and elbow, inclining slightly toward the body, the left foot touching the neck, just back of the ear, the right foot resting on the forehead, almost touching the right eye.

By the 18th day of incubation the shell is cracked in one or more places near the large end. The cracks are radially arranged in areas, and are clearly produced by pressure upon the shell from within. Examination reveals the fact that beneath each cracked area lies some protruding part of the embryo—the knee, bill, or shoulder—which is in contact with the shell when the embryo has a muscular contortion. A faint peeping can be heard at this time.

On the 19th, in a few instances on the 20th day of incubation, the shell was found broken through by the tip of the bill for a space the diameter of the tip of the bill. This break was usually near the center of the first seen cracked area. I did not find any instance in which this air hole was materially enlarged, nor any instance in which any other holes were made in the shell. On the 21st day of incubation the muscular contortions of the chick resulted in bursting off the entire large

end of the egg. The chick then readily wriggled himself free from the remainder of the shell. The yolk sac is drawn into the body and closed at the end of the 20th day of incubation.

During the first day after hatching the young bird lies in an apparently exhausted condition, and receives no food. Feeding begins on the second day. Late hatched young are likely to be attacked by myriads of the little red ants which infest the islands, and many are killed by them.

Regurgitation is never practiced by this tern. The fish, here usually the sand lance (*Ammodytes americanus*), is caught in the water and is held by its middle while it is being carried to the waiting young. The fish is deftly turned head toward the chick and thrust into its mouth or even pushed down its throat. The size of the fish did not necessarily bear any relation to the size of the chick. It was no uncommon thing to find a two-day-old chick peacefully sleeping in the nest with an inch or more of fish protruding from its mouth. It was forced to eat its fish by intallments! Several fishes forcibly removed from protesting young had the head and upper part of the body digested, while the tail region was still exposed to the air.

The young usually remained in the nest for the first three days, but on the fourth day they left it but remained near. Young hatched in nests placed among thick grass, as on Penikese island, remain in the vicinity of the nest until they can fly away from it. Here there are paths trodden in the grass, radiating from the nest in several directions, but seldom farther than a rod from the nest. The young are fed by the parents or parent until some time after the young are able to fly about and accompany the old to the fishing grounds. I have never seen a young bird fed while both birds were flying. Invariably the young, at least, settles upon the water before receiving the fish, and shakes his plumage as from defilement after receiving it.

I have never seen either the young or old birds eat the remains of the egg shells, nor have I ever found remnants of the shells in the digestive tracts of the birds, but I have found shells from which young had unmistakably escaped in the water where they could not possibly have been blown by the wind.

Shells are not left in the nest, and there is some evidence for believing that the old birds remove them and carry them some distance before dropping them.

How do the old birds recognize their own young among the multitude of young birds congregated on the beach? was a question which occupied a good deal of my attention and interest. After the young leave the nest and its vicinity they wander about aimlessly and may be at widely different places at two visits of the old birds. Hence it often becomes a serious question on the part of the parent how to find its offspring. Abundant opportunity was afforded for studying this question. Old birds with young which had left the nest, when coming in with a fish, stooped to examine each group of young in turn until a young bird, apparently its own, was found, when the old bird alighted. Immediately the youngster began to dance and call vociferously, but not until the old one had touched the young one with its forehead was the question decided. Often this minute inspection was immediately followed by the departure of the old bird without delivering the fish, the quest for its own young being renewed. It thus became clear that sight alone was not depended upon for recognition, but that the final decision rested upon the sense of smell. Sometimes the quest resulted in failure, when the old bird swallowed the fish. The evidence seemed to indicate that these terns feed only their own young.

THE ROSEATE TERN. (*Sterna dougalli*)

I found the Roseate Tern breeding only on the Woepecket, Penikese, and Muskeget islands. Everywhere their numbers were far less than those of the Common Tern. On the Woepeckets they were largely confined to the two smaller islands, on Penikese to the north-eastern border and on the sand shoal locally known as Little Penikese, and on Muskeget to the narrow neck extending toward the long sand pit of Tuckernuck.

This tern seems to be far more fastidious about its nesting than the Common Tern. I found no nests that were not in the midst of grass, and the nest is generally well hidden by a covering of grass. In such situations the nests are more diffi-

cult to find, and the finer spotting of the eggs renders them less conspicuous in the shade of the grasses.

Only two nests were studied to the completion of the incubation period, but these had an incubation period of 21 days. In general the habits do not differ from those of the Common Tern. Their instincts inclined them to be more wary, but they were more courageous when their nests or young seemed in danger. An outraged pair would even follow the intruder from one of the Woepecket islands to the other, fighting all the way.

THE PLUMAGE OF S. HIRUNDO AND DOUGALLI.

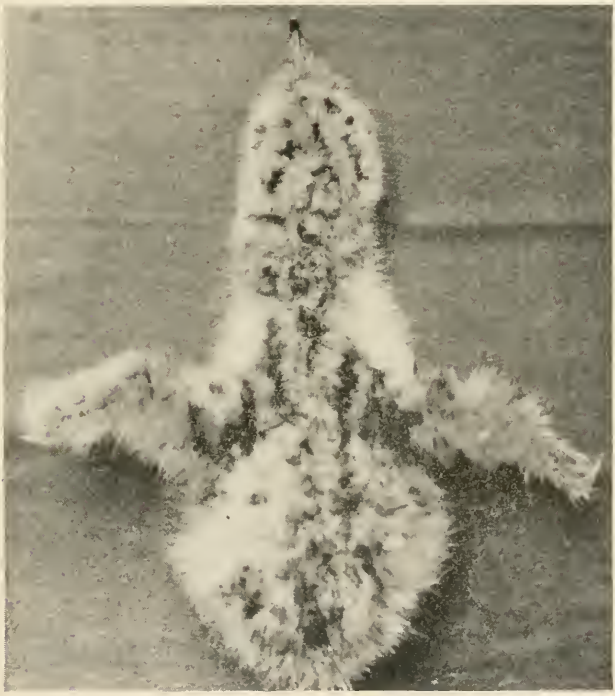
Any such study would lack completeness that did not mention the plumages of the downy young and the young birds in their first definitive feathers.

The downy young of *hirundo* is mottled with tawny and black or dusky, the mottling varying within small limits with the individual. The whole throat is dusky, but the rest of the under-parts are pure white. The expanded, fluffy down feathers form a complete covering for the body, but they grow only in the feather tracts which are characteristic of the terns. Figure 4 illustrates the pattern of mottling. This pattern seems particularly well adapted for the concealment of the chick among the rubble of the beach or upon the drift seaweed. On the gray sand or among the yellowish grass, however, the young is readily detected because its colors are here contrasty. While the young remain in the nest they seldom show fear, but raise their heads and open their mouths for food.

The downy young of *dougalli* are tawny *streaked* with dusky. One could not confuse this pattern with that of the downy young of *hirundo*. The legs of the young *hirundo* are coral red or lighter, while the legs of the downy young *dougalli* are invariably almost black. The streaked pattern of the *dougalli* chick renders the bird almost invisible in the grass covered nest. The young of *dougalli* flatten themselves down into the nest in apparent fear upon the approach of an intruder. When they leave the nest they hide away under the grass. Their difference in color pattern seems to go with a difference in disposition.

The young in his first definitive feather plumage is, in *hirundo,* barred across the back and wings with dusky brown and rufous. The main body of the feather is "gull blue," its distal end is rufous-brown for the space of several millimeters in width, and between this rufous brown distal margin and the field of "gull blue" there is a crescent of black which is very

Figure 4



Common Tern (*Sterna hirundo*). Downy young, three days old.

variable in extent. Enough of the feather is exposed to show the three colors mentioned above. The combined effect is a distinct barring of the color pattern of the upper parts. The entire under parts are pure white. In *dougalli* the pattern is more varied and is well illustrated by figure 1. Here the black tends to form more than one bar.

The habits of the partly fledged young, before they are capable of flight, lend color to the supposition that these color patterns are protective in nature.

I could discover no evidence, however, to prove that the young birds are conscious of the protective nature of their color patterns. The downy young usually squatted and "froze" when the parent uttered the alarm cry, and the partly fledged young usually ran to hide—invariably trying to crawl under something.

The streakiness of the *dougalli* downy young harmonizes with the shadows which the grass overhanging the nest cast. After they leave the nest they are difficult to see beneath it, because the colors and pattern of the downy plumage harmonize well with the grass and shadows. The blotchiness of the *hirundo* downy young harmonizes with the rubble of the beach and, while there is more contrast with the grass in which some are found than with the downy young of *dougalli*, there is yet harmony enough to make the young bird inconspicuous while it is still.

The juvenile *hirundo* hides, or tries to hide, like the Ostrich —by thrusting its head beneath the grass cover. Its head is nearly black with a light colored frontlet, while the barring of the rest of the upper parts with tawny and dusky or black harmonize with the grass beneath which the head is thrust. Persons who had not studied the terns in their nesting places were unable to see the young when so placed. Under broad leaved plants these young were readily seen after the leaves had been parted. The juvenile *dougalli* pushes himself completely beneath the grass or leafy retreat. When the covering is partly removed his peculiar pattern of barring and mottling makes him inconspicuous. His habit of moving toward deeper cover when his hiding place is disturbed betrays him.

The pure black crown, pure white under parts, and clear "gull blue" upper parts of both of these terns in adult plumage is well known. If there be any protective coloration in the adult pattern it must be while the birds are a-wing, for they are conspicuous objects when a-light.

The color pattern of the downy young is outlined when the down feathers first make their appearance upon the skin surface of the six-day embryo. That is, the pigment begins to develop in the down feathers which are to be black almost as soon as the feather papilla appears upon the skin surface. An entire down feather is seldom all one color, but those which are black at the tip are tawny in the middle and black at the base, and those which are tawny at the tip are also black at the base. This applies only to the down feathers of the dorsal surface. There are many down feathers on the ventral surface which are wholly white.

Taking the three plumages as illustrating a process of evolution of color pattern, and taking the streakiness of the downy young of *dougalli* as the more primitive, we may readily perceive that longitudinal stripes of color break up into transverse bars, and the bars give place to a uniform distribution of color. In the evolution of the present adult coloration of the terns of the genus Sterna, it seems probable that a primitive longitudinal streaking became broken up into longitudinal series of spots which were arranged in transverse series so as to give the appearance of broken bars; these series of spots extended laterally, fused, and so became in reality transverse bars, which, spreading and finally fusing, resulted in the uniform coloration of the dorsal region in Sterna adults. Such a transition would be in complete conformity to the law announced by Eimer ('82).

A PRELIMINARY LIST OF THE BIRDS OF SENECA COUNTY, OHIO.

BY W. F. HENNINGER.

The need of a new county list of birds in Ohio may be questioned, with two excellent state lists—Jones' and Dawson's—of recent issue; but it is only after every county in the state has been worked over with care that we shall feel warranted in saying that any list is more than preliminary in character. And if this county list, though by no means exhaustive

or complete, shall help just a trifle in clearing up some interesting points of distribution, migration, breeding habits, and life histories of the birds of Ohio, it will have fulfilled its purpose. While the four years of the writer's work in the county, from July 26, 1902, to June 1, 1906, is but a short time, and his impaired health during the winter, his frequent absence from his field of work, and his otherwise busy life, have made it impossible to do justice to the work, this list is the first effort at systematic ornithological work in the county.

Seneca county belongs to the tier of counties along the parallel of 41 °, and has more soil under cultivation than any other county in Ohio, in contrast to Scioto and Pike counties, my former field of work, in which the wooded area exceeds the arable. Seneca county was once covered with dense woods and swamps, of which no large tracts of woods remain; and of swamps nothing but insignificant pools remain, even the large Bloomville marshes in the south-eastern part of the county having been tiled and drained. These crowded conditions cause a great concentration of bird life during the migration season.

The county is level, a few ravines only being found in the northern and southern parts in close proximity to the Sandusky river, which divides the county into two almost equal parts with Tiffin as the center.

The climate is rather unhealthful; the excessive moisture of the atmosphere causing the summer heat to be very oppressive and the winter's cold to cleave bone and marrow. The great amount of snowfall accounts for the small number of residents and winter visitors among the birds.

Practically the entire county has been worked over with the exception of the south-eastern corner, the immediate neighborhood of Tiffin naturally coming in for the greatest amount of attention. The information has been gleaned from the writer's field work and his own and several other local collections, notably that of the Heidelberg University, which he relabeled and rearranged in the fall of 1904. While these collections show that the birds in question have been taken in the county, they are greatly deficient in exact and sufficient data.

The same painstaking care is exercised in determining the species as that exercised in the writer's List of the Birds of Middle Southern Ohio (Wilson Bulletin, September, 1902).

It would not be proper to publish this list without making grateful acknowledgment to Prof. E. M. Kleckner, of Heidelberg University, Mr. Hergenrather, of the Tiffin Fire Department, and my indefatigable young friend, Mr. Karl J. Heilmann, of the Tiffin High School, for much efficient help rendered the writer in many ways.

1. **Colymbus auritus.**—Horned Grebe. A rather rare winter visitor. One shot December 20, 1902.

2. **Podilymbus podiceps.**—Pied-billed Grebe. A rare summer resident, but abundant transient. Middle of April to October 6, 1902.

3. **Gavia imber.**—Loon. A rare transient, more common in former years.

4. **Gavia lumme.**—Red-throated Loon. November 7, 1904, one was observed for ten minutes on the Sandusky river, then shot at, when he flew away.

5. **Larus argentatus.**—Herring Gull. Abundant spring tran-transient. April 1 and 2, 1904. Not seen in fall.

6. **Larus philadelphia.**—Bonaparte Gull. Not common spring transient. April 1 and 2, 1904 Not seen in fall.

7. **Sterna hirundo.**—Common Tern. Occasional spring migrant. 1904.

8. **Phalacrocorax dilophus.**—Double-crested Cormorant. Two records, one about thirteen years ago, one shot in spring of 1902.

9. **Pelecanus erythrorhynchos.**—American White Pelican. Two records. See Wilson Bulletin No. 53, December, 1905, page 126.

10. **Merganser americanus.**—American Merganser.

11. **Merganser serrator.**—Red-breasted Merganser.

12. **Lophodytes cucullatus.**—Hooded Merganser.

All of the above three species are in local collections taken in previous years in the county. Lately **M. serrator** has not been taken here, while the other two have become rare.

13. **Anas boschas.**—Mallard. Abundant transient in both seasons. Seen as late as June 3, 1904.

14. **Anas obscura.**—Black Duck. All specimens taken in the county belong to this form, **rubripes** not having been found. Nov. 26, 1903.

15. **Mareca americana.**—Bald-pate. Once an abundant migrant. None lately.

16. **Nettion carolinensis.**—Green-winged Teal. Rare transient. There are specimens in local collections.

17. **Querquedula discors.**—Blue-winged Teal. Tolerably common

transient. November, 1902, Bloomville; August 31, 1904, young taken.

18. **Spatula clypeata.**—Shoveller. April 26, 1906, a female observed on the Sandusky river. This is my only record.

19. **Dafila acuta**—Pin-tail. Our most common transient duck.

20. **Aix sponsa.**—Wood Duck. Rather uncommon summer resident. Nest near Old Fort in May, 1905. Four males were shot on October 18, 1904, by a local hunter.

21. **Aythya americana.**—Red-head.

22. **Aythya vallisneria.**—Canvas-back.

While these two ducks have been taken in former years, there is no recent record. They were never abundant transients.

23. **Aythya affinis.**—Lesser Scaup Duck. Fairly common transient.

24. **Aythya collaris.**—Ring-necked Duck.—Not common transient.

25. **Clangula clangula americana.**—American Golden-eye. Rare transient. November 7, 1904.

26. **Charitonetta albeola.**—Buffle-head. Not common transient. There are specimens in local collections.

27. **Harelda hyemalis.**—Old-squaw. A male taken in December, 1901, is in a local collection.

28. **Erismatura jamaicensis.**—Ruddy Duck. Not common transient.

29. **Chen cærulescens.**—Blue Goose. A male shot March 24, 1905, is now in the writer's collection. See Wilson Bulletin, June, 1905, p. 63.

30. **Branta canadensis.**—Canada Goose. Common spring and fall transient. Occasionally a winter resident, as in the winter of 1905-6.

31. **Branta canadensis hutchinsii.**—Hutchin's Goose. A male shot March 24, 1905, is now in the writer's collection. Compare Wilson Buleltin, June, 1905, p. 64.

32. **Botaurus lentiginosus.**—American Bittern. Not uncommon transient.

33. **Ardetta exilis.**—Least Bittern. Not uncommon transient; occasional summer resident.

34. **Ardea herodias.**—Great Blue Heron. Tolerably common summer resident.

35. **Butorides virescens.**—Green Heron. Fairly common summer resident. Nest with four eggs, May 10, 1904; with four young, June 3, 1904.

36. **Rallus elegans.**—King Rail. Rare transient. There are specimens in local collections.

37. **Rallus virginianus.**—Virginia Rail. Common transient, as early as April 20, 1906.

38. **Porzana carolina.**—Sora. Common transient. Noticed as late as June 11, 1904, which may indicate that it breeds.

39. **Gallinula galeata.**—Florida Gallinule. Rare transient. There are specimens in local collections.

40. **Fulica americana.**—American Coot. Common migrant, April and October.

41. **Philohela minor.**—American Woodcock. Still a fairly common summer resident, this county being especially adapted to the needs of the bird.

42. **Gallinago delicata.**—Wilson's Snipe. Not nearly as common as the Woodcock. April 21, 1906, is an average migration date.

43. **Tringa canutus.**—Knot. The only record is the one given in the Auk, Vol. XXI, No. 2, page 277, a specimen shot in the spring of 1894, on the banks of the Sandusky river.

44. **Actodromas maculata.**—Pectoral Sandpiper. A fairly common transient. May 10, 1904; May 15, 1906; August 31, 1904.

45. **Actodromas bairdii.**—Baird's Sandpiper. A not common transient. May 10 and August 31, 1904.

48. **Pelidna alpina sakhalina.**—Red-backed Sandpiper. Not a common transient. May 10, 1904. A young female which had been injured by flying against a telephone wire, October 10, 1902, is now in the writer's collection.

47. **Ereunetes pusillus.**—Semipalmated Sandpiper. May 28, 1904, I observed four specimens at close range in the muck of a deserted reservoir along the C. C. C. & St. L. tracks.

48. **Totanus melanoleucus.**—Greater Yellow-legs. A fairly common transient. May 10 and August 31, 1904.

49. **Totanus flavipes.**—Yellow-legs. A common transient. May 10 and August 31, 1904; May 15, 1906.

50. **Helodromas solitarius.**—Solitary Sandpiper. A common transient. May 10 and August 31, 1904; May 15, 1906.

51. **Bartramia longicauda.**—Bartramian Sandpiper. A common transient. May 10, 1904. No breeding records so far.

52. **Actitis macularia.**—Spotted Sandpiper. Common summer resident. Arrivals: April 20, 1903; April 29, 1904; April 21, 1906. Departures: September 18, 1903; August 31, 1904.

53. **Charadrius dominicus.**—American Golden Plover. There is a specimen in the Heidelberg museum collected in the spring of 1894, on the banks of the Sandusky river. This is the only record.

54. **Oxyechus vociferus.**—Killdeer. Common summer resident. Arrival as early as February 7, 1906; departure as late as November 26, 1903. Nest with four eggs June 10, 1905.

55. **Colinus virginianus.**—Bob-white. Fairly common resident, but not nearly as common as in southern Ohio. Nest with 15 eggs (fresh) July 22, 1903; with 17 eggs (fresh) August 7, 1904.

56. **Bonasa umbellus.**—Ruffed Grouse. The last specimen of this species was shot by a young man of my congregation three miles north of Tiffin, in the fall of 1892. Since then it seems to be extinct.

57. **Meleagris gallopavo silvestris.**—Wild Turkey. Extinct. The last record given is 1880.

58. **Ectopistes migratorius.**—Passenger Pigeon. Extinct. No records since the '60s. There were several large roosting places in the county.

59. **Zenaidura macroura.**—Mourning Dove. Common in summer, less so in winter, but I have found it in some numbers every winter.

60. **Cathartes aura.**—Turkey Vulture. Fairly common summer resident. Arrives the first week in April and remains until late October.

61. **Circus hudsonius.**—Marsh Hawk. A not common migrant and winter resident. Not seen later than March 19, 1903.

62. **Accipiter velox.**—Sharp-shinned Hawk. Rather rare resident.

63. **Accipiter cooperii.**—Cooper's Hawk. Rather rare resident.

64. **Buteo borealis.**—Red-tailed Hawk. Common resident. Nests with eggs April 5, 1905.

65. **Buteo lineatus.**—Red-shouldered Hawk. Common in summer, less so in winter. Nest with four fresh eggs, April 21, 1906.

66. **Buteo platypterus.**—Broad-winged Hawk. November 30, 1903; March 10, 1904. Apparently not always present in summer.

67. **Aquila chrysætos.**—Golden Eagle. No records since 1884, but there are several specimens in local collections.

68. **Haliæetus leucocephalus.**—Bald Eagle. An adult shot at Bloomville is now in the Heidelberg University museum. There are several young ones in other collections.

69. **Falco columbarius.**—Pigeon Hawk. Rare migrant, but solitary individuals are seen in summer, notably July 10 and 13, 1904.

70. **Falco sparverius.**—American Sparrow Hawk. Common resident. Nest with five fresh eggs May 28, 1904 (this was the second set).

71. **Pandion haliætus carolinensis.**—American Osprey. Not common migrant, but seen every spring in April along the Sandusky river.

72. **Strix pratincola.**—American Barn Owl. Four records. Compare Auk, Vol. XX, No. 1, January, 1903, p. 67, and Wilson Bulletin No. 53, December, 1905, p. 132.

73. **Asio wilsonianus.**—American Long-eared Owl. One shot two miles north of Tiffin, September 15, 1902. Apparently a rather rare resident.

74. **Asio accipitrinus.**—Short-eared Owl. Not common spring and fall migrant. There are several in local collections.

75. **Syrnium varium.**—Barred Owl. A rather rare resident.

76. **Megascops asio.**—Screech Owl. Common resident. Nest with five fresh eggs April 2, 1905. Four young June 23, 1903.

77. **Bubo virginianus.**—Great Horned Owl. A tolerably common resident, even inside the corporation limits.

78. **Coccyzus americanus.**—Yellow-billed Cuckoo. Fairly common

summer resident. Arrival: May 9, 1903; May 7, 1904; May 15, 1906. Departure: September 15, 1902.

79. **Coccyzus erythrophthalmus.**—Black-billed Cuckoo. Fairly common summer resident. Arrival: May 10, 1904; May 15, 1906.

80. **Ceryle alcyon.**—Belted Kingfisher. Common in summer and a few remain all winter, even in the winter of 1903-04.

81. **Dryobates villosus.**—Hairy Woodpecker. Common resident.

82. **Dryobates pubescens medianus.**—Downy Woodpecker. Common resident. Nest with four fresh eggs May 9, 1903.

83. **Sphyrapicus varius.**—Yellow-bellied Sapsucker. Common transient. April 5, 1904; April 20, 1906.

84. **Melanerpes erythrocephalus.**—Red-headed Woodpecker. Common summer resident, arriving late in April and departing in October, rarely remaining all winter.

85. **Centurus carolinus.**—Red-bellied Woodpecker. Rare resident. One shot November 26, 1903. Seen May 10, 1904. These are the only records.

86. **Colaptes auratus luteus.**—Northern Flicker. Common resident. Nest May 6, 1905.

87. **Antrostomus carolinensis.**—Whip-poor-will. Rare summer resident. Found in some of the ravines in the northern and southern parts of the county.

88. **Chordeiles virginianus.**—Nighthawk. A common summer resident, arriving between April 20 and May 10, departing late in September or early in October.

89. **Chætura pelagica.**—Chimney Swift. Common summer resident. Arrival: April 18, 1903; May 1, 1904; April 20, 1905; April 20, 1906, at 5 p. m. Departure: September 18, 1903; September 22, 1904; September 8, 1905.

90. **Trochilus colubris.**—Ruby-throated Hummingbird. Fairly common summer resident. Arrival: May 9, 1903; May 10, 1904; May 15, 1906.

91. **Tyrannus tyrannus.**—Kingbird. Common summer resident. Arrival: May 9, 1903; May 3, 1904; April 28, 1906. Departure: September 17, 1904. Nest with three fresh eggs June 11, 1904.

92. **Myiarchus crinitus.**—Crested Flycatcher. Common summer resident. Arrival: May 9, 1903; May 7, 1904; May 11, 1906. Departure: September 17, 1904.

93. **Sayornis phœbe.**—Phœbe. Common summer resident. Arrival: March 19, 1903; April 15, 1904; April 1, 1905; April 1, 1906. Departure: September 17, 1904. Nest begun April 5. Five heavily incubated eggs May 1, young May 10. Second set June 3, three eggs.

94. **Contopus virens.**—Wood Pewee. Common summer resident. Arrival: May 9, 1903; May 10, 1904; May 6, 1905; May 11, 1906. Departure: September 15, 1902; September 18, 1903; September 17, 1904.

95. **Empidonax flaviventris.**—Yellow-bellied Flycatcher. Rare migrant. May 15, 1906, two seen. September 17, 1904, one seen.

96. **Empidonax virescens.**—Green-crested Flycatcher. Fairly common summer resident. Arrival: May 9, 1903; May 10, 1904; May 11, 1906. Last, September 17, 1904.

97. **Empidonax traillii.**—Traill's Flycatcher. Fairly common summer resident. Arrival: May 10, 1904; May 15, 1906.

98. **Empidonax minimus.**—Least Flycatcher. Tolerably common migrant. May 10, 1904; May 15, 1906.

99. **Otocorys alpestris.**—Horned Lark. A flock of seventeen seen on January 2, 1904.

100. **Otocorys alpestris praticola.**—Prairie Horned Lark. Resident. More common in winter.

101. **Otocorys alpestris hoyti.**—Hoyt's Horned Lark. Two seen March 15, 1905. They were not shy and easily recognizable.

102. **Cyanocitta cristata.**—Blue Jay. Common resident. In the spring of 1903 a pair nested in a rural delivery mail-box east of Tiffin.

103. **Corvus brachyrhynchos.**—American Crow. Resident. Several large roosts were noted in the winter of 1904-5. Nests with five fresh eggs April 5, 1905, with five incubated eggs April 21, 1906, and four incubated eggs May 15, 1906. Four young May 10, 1904.

104. **Dolichonyx oryzivorus.**—Bobolink. Common summer resident. Arrival: May 9, 1903; April 29, 1904; April 28, 1905; April 21, 1906, 5:30 p. m. Departure: September 15, 1902; September 18, 1903; September 22, 1904; September 8, 1905.

105. **Molothrus ater.**—Cowbird. Common summer resident. Arrival: March 19, 1903; April 14, 1904; April 1, 1905; April 13, 1906. From the middle of June until the end of August, 1905, there was a Cowbird roost on Jefferson street, and as I sat in front of my house every evening I could see at first the five or more advance scouts coming in and circling around for a while, until they settled. Then came troops numbering from 20 to 40, while over them at right angles, enormous flocks of Grackles would fly to their roost at the Heidelberg University campus. From the end of August on, however, they deserted their own roost and joined the Grackles on the campus. In the fall they often mingle with the Bobolinks, while in the spring they prefer the company of the Grackles and Red-wings.

106. **Agelaius phœniceus.**—Red-winged Blackbird. Common summer resident. Breeding records are too numerous to mention. Arrival: March 19, 1903; March 10, 1904; March 15, 1905; March 25, 1906.

107. **Sturnella magna.**—Meadowlark. Common summer resident. A few always stay, even during the coldest winters. Six fresh eggs June 3, 1904.

108. **Icterus spurius.**—Orchard Oriole. A rather rare summer res-

ident. Arrival: May 1, 1903; May 6, 1904; May 6, 1905; April 28, 1906.

109. **Icterus galbula.**—Baltimore Oriole. Common summer resident. Arrival: May 1, 1903; April 29, 1904; April 28, 1905; April 27, 1906.

110. **Euphagus carolinus.**—Rusty Blackbird. Common migrant. November and March until May.

111. **Quiscalus quiscula æneus.**—Bronzed Grackle. Common summer resident. Arrival: March 9, 1903; March 4, 1904; March 14, 1905; March 25, 1906. Departure: September 18, 1903; November 4, 1904; October 29, 1905. There are several large roosts in this vicinity, an especially large one on the Heidelberg University campus.

112. **Carpodacus purpureus.**—Purple Finch. Occasional winter visitor. January 6, 1904; January 5, 1905.

113. **Loxia curvirostra minor.**—American Crossbill. Specimens shot December 5 and 12, 1892, are in the Heidelberg University museum.

114. **Astragalinus tristis.**—American Goldfinch. Common resident. Nest with five eggs August 12, 1903, with six young August 8, 1905.

115. **Passerina nivalis.**—Snowflake. Rare winter visitor. A flock of 50 to 60 January 2, 1904.

116. **Pocœcetes gramineus.**—Vesper Sparrow. Common summer resident. Arrival: March 19, 1903; April 1, 1904; April 1, 1905; April 1, 1906. Departure: October 13, 1904.

117. **Passerculus sandwichensis savanna.**—Savanna Sparrow. Two records: March 19, 1903; May 10, 1904. Solitary individuals.

118. **Coturniculus savannarum passerinus.**—Grasshopper Sparrow. Common summer resident. Arrival: May 9, 1903; May 5, 1904; April 28, 1906. Nest with five fresh eggs and one with four fresh eggs, June 3, 1904.

119. **Zonotrichia leucophrys.**—White-crowned Sparrow. Common transient. September 15 to 18, 1904; May 10, 1904, May 15 and April 28, 1906.

120. **Zonotrichia albicollis.**—White-throated Sparrow. Common transient, but rare winter resident. Arrival and departure with the preceding.

121. **Spizella monticola.**—Tree Sparrow. Not common winter resident, more common as a transient. It remains as late as May 10 (1904).

122. **Spizella socialis.**—Chipping Sparrow. Common summer resident. It nests about May 10 to 15. Arrival: March 19, 1903; March 27, 1904; April 1, 1905; April 3, 1906.

123. **Spizella pusilla.**—Field Sparrow. Common summer resident. Arrival: March 1, 1903; April 1, 1904; April 1, 1905; April 4, 1906.

Nests with four fresh eggs June 11, 1904 (second set). First sets: May 13, four eggs, May 15, three eggs, 1906.

124. **Junco hyemalis.**—Slate-colored Junco. Common winter resident. It arrives as early as September 22, 1904, leaving as late as May 5, 1904.

125. **Melospiza cinerea melodia.**—Song Sparrow. Common resident. First nests: May 10, 1905, four eggs, heavily incubated by May 15 and 19, 1906, five eggs. Second nests: June 23, 1903, four eggs. Nest with one young Cowbird and one fresh Cowbird's egg, but without either eggs or young of the owner, May 15, 1906.

126. **Melospiza lincolnii.**—Lincoln's Sparrow. The only records are two seen in the brush along the Sandusky river, May 15, 1906.

127. **Melospiza georgiana.**—Swamp Sparrow. Not common transient. May 9, 1903, and April 28 and May 15, 1906.

128. **Passerella iliaca.**—Fox Sparrow. Not common spring migrant. April 15, 1904. No fall records.

129. **Pipilo erythrophthalmus.**—Towhee. Common summer resident. Arrival: March 19, 1903; April 15, 1904; March 14, 1905. Departure: October 10, 1903; October 13, 1904.

130. **Cardinalis cardinalis.**—Cardinal. Common resident, but fewer numbers in winter. Nests about May 10.

131. **Zamelodia ludoviciana.**—Rose-breasted Grosbeak. Common transient. No breeding records yet. Arrival: May 8, 1903; May 10, 1904; May 15, 1906; August 1, 1903.

132. **Cyanospiza cyanea.**—Indigo Bunting. Common summer resident. Arrival: May 9, 1903; May 10, 1904; May 11, 1906. Departure: October 13, 1904. Nest with three eggs and one of Cowbird, June 11, 1904, with two eggs and two of Cowbird (fresh) June 23, 1903. With 4 young. August 11, 1905.

133. **Spiza americana.**—Dickcissel. A somewhat rare summer resident, mostly in the southern part of the county. Arrival: May 10, 1904.

134. **Piranga erythromelas.**—Scarlet Tanager. A common summer resident. Arrival: May 9, 1903; May 10, 1904; May 11, 1906. Departure: September 18, 1903.

135. **Progne subis.**—Purple Martin. A tolerably common summer resident. Arrival: April 15, 1903; April 1, 1904; April 21, 1905; April 1, 1906.

136. **Petrochelidon lunifrons.**—Cliff Swallow. A fairly common but local summer resident. May 13, 1904.

137. **Hirundo erythrogaster.**—Barn Swallow. Common summer resident. Arrival: April 3, 1903; April 15, 1904; April 20, 1906.

138. **Iridoprocne bicolor.**—Tree Swallow. Rare transient. April 21, 1906.

139. **Riparia riparia.**—Bank Swallow. Tolerably common summer rsident. Arrival: May 9, 1903; May 10, 1904; April 21, 1906.

140. **Stelgidopteryx serripennis.**—Rough-winged Swallow. Fairly common summer resident. Arrival: May 9, 1904; May 15, 1906. Breeds May 28, 1904.

141. **Ampelis cedrorum.**—Cedar Waxwing. Common resident. September 18, 1903, a nest with three young.

142. **Lanius borealis.**—Northern Shrike. Rare winter visitor. Recorded during the winter of 1903-4 many times.

143. **Lanius ludovicianus migrans.**—Migrant Shrike. Fairly common resident. May 5, 1904, a nest with four eggs. June 23, 1903, a nest with four young.

144. **Vireo olivaceus.**—Red-eyed Vireo. Common summer resident. Arrival: May 9, 1903; May 5, 1904; April 28, 1906. Departure: September 22, to October 13, 1904.

145. **Vireo philadelphicus.**—Philadelphia Vireo. Rare transient. May 9, 1903, a pair.

146. **Vireo gilvus.**—Warbling Vireo. Common summer resident. Arrival: May 9, 1903; May 5, 1904; May 11, 1906.

147. **Vireo flavifrons.**—Yellow-throated Vireo. Not common summer resident. Arrival: May 9, 1903; May 10, 1904; May 15, 1906.

148. **Vireo solitarius.**—Blue-headed Vireo. Not common transient. No breeding records. Arrival: May 10, 1904; May 15, 1906.

149. **Mniotilta varia.**—Black and White Warbler. Common transient. Rare summer resident. Arrival: May 10, 1904; May 11, 1906; September 17, 1904.

150. **Helminthophila pinus.**—Blue-winged Warbler. Common summer resident. May 9, 1903; May 5, 1904; May 11, 1906.

151. **Helminthophila chrysoptera.**—Golden-winged Warbler. Not common migrant. May 10, 1904; May 15, 1906.

152. **Helminthophila leucobronchialis.**—Brewster's Warbler. One record, September 17, 1904. See Wilson Bulletin, December, 1904, pp. 109-10.

153. **Helminthophila rubricapilla.**—Nashville Warbler. Common spring transient. May 11 and 15, 1906.

154. **Helminthophila peregrina.**—Tennessee Warbler. Common transient. May 15, 1906; September 16, 1902; September 18, 1903; September 22, 1904.

155. **Compsothlypis americana usneæ.**—Northern Parula Warbler. Common transient. May 10, 1904; May 15, 1906; September 15, 1902; September 18, 1903; September 22, 1904.

156. **Dendroica tigrina.**—Cape May Warbler. Rare transient. May 15, 1906. September 17, 1904.

157. **Dendroica æstiva.**—Yellow Warbler. Common summer resident. Arrival: April 25, 1903; May 3, 1904; April 26, 1906. Nest with five eggs and one of Cowbird May 21, 1904, with three young June 11, 1904.

158. **Dendroica cærulescens.**—Black-throated Blue Warbler. Com-

mon transient. May 10, 1904; May 15, 1906; September 15, 1902; September 18, 1903; September 22, 1904; September 8, 1905.

159. **Dendroica coronata.**—Myrtle Warbler. Common transient. May 5, 1903; May 10, 1904; April 28, 1906; September 17, 1904.

160. **Dendroica caerulea.**—Cerulean Warbler. Rare migrant and summer resident. May 10, 1904; May 15, 1906; September 17, 1904.

161. **Dendroica maculosa.**—Magnolia Warbler. Common transient. May 10, 1904; May 15, 1906; September 18, 1903; September 22, 1904; September 8, 1905.

162. **Dendroica pensylvanica.**—Chestnut-sided Warbler. Common transient. May 10, 1904; May 11 to 15, 1906.

163. **Dendroica castanea.**—Bay-breasted Warbler. Common transient. May 10, 1904; May 15, 1906; September 18, 1903; September 15, 1902.

164. **Dendroica striata.**—Black-poll Warbler. Common transient. May 9, 1903; May 10, 1904; May 15, 1906; September 15, 1902; September 18, 1903; September 17 to 22, 1904; September 8, 1905.

165. **Dendroica blackburniæ.**—Blackburnian Warbler. Common transient. May 10, 1904; May 15, 1906; September 17, 1904.

167. **Dendroica virens.**—Black-throated Green Warbler. Common transient. May 9, 1903; May 10, 1904; May 11 to 15, 1906; September 15, 1902; September 18, 1903; September 22, 1904; September 8, 1905.

167. **Dendroica kirtlandi.**—Kirtland's Warbler. Two seen May 11, 1906. They were observed walking on the ground, and gleaning in low saplings ten feet away from me. Having seen the entire series of this species in the University of Michigan collection, in September, 1905, a mistake in identification is excluded. The bird bears a certain resemblance to the Magnolia Warbler.

168. **Dendroica vigorsii.**—Pine Warbler. Rare transient. May 10, 1904; May 15, 1906.

169. **Dendroica palmarum.**—Palm Warbler. Rare migrant. May 10, 1904; May 15, 1906.

70. **Dendroica discolor.**—Prairie Warbler. Rare. Four seen on May 11, 1906. See another page of this issue.

171. **Seiurus aurocapillus.**—Oven-bird. Common summer resident. Arrival: May 10, 1904; May 11, 1906. Departure: September 18, 1903; September 22, 1904.

172. **Seiurus noveboracensis.**—Water-Thrush. Rather rare migrant. September 17, 1904. May 15, 1906.

173. **Seiurus motacilla.**—Louisiana Water-Thrush. Common transient, but rare summer resident. May 10, 1904. September 18, 1903.

174. **Geothlypis philadelphia.**—Mourning Warbler. Fairly common migrant. May 10, 1904; May 15, 1906.

175. **Geothlypis trichas brachydactyla.**—Northern Yellow-throat. Common summer resident. Arrival: May 9, 1903; May 10, 1904; May 11, 1906. Departure: September 17, 1904.

176. **Icteria virens.**—Yellow-breasted Chat. Common summer resident, but local in distribution. Arrival: May 9, 1903; May 10, 1904; May 11, 1906.

177. **Wilsonia pusilla.**—Wilson's Warbler. Rather rare transient. May 10, 1904; May 15, 1906.

178. **Wilsonia canadensis.**—Canadian Warbler. Common spring transient. May 10, 1904. Abundant May 15, 1906.

179. **Setophaga ruticilla.**—American Redstart. Common summer resident. Arrival: May 9, 1903; May 5, 1904; April 28, 1906. Departure: September 17, 1904.

180. **Anthus pensilvanicus.**—American Pipit. Not common transient. May 5, 1904. September 17, 1904; October 13, 1905.

181. **Galeoscoptes carolinensis.**—Catbird. Common summer resident. Arrival: April 20, 1903; April 29, 1904; April 28, 1906. Departure: September 22, 1904.

182. **Toxostoma rufum.**—Brown Thrasher. Common summer resident. Arrival: March 19, 1903; April 14, 1904; April 5, 1905; April 20, 1906. Departure: September 15, 1902; September 18, 1903; September 22, 1904; September 22, 1905. Nesting May 13, 1904.

183. **Thryothorus ludovicianus.**—Carolina Wren. Rare. April 18, 1903; May 5, 1904.

184. **Troglodytes aëdon.**—House Wren. Common summer resident. Arrival: April 18, 1903; May 2, 1904; April 27, 1906. Nesting June 3, 1904.

185. **Olbiorchilus hiemalis.**—Winter Wren. Not common winter resident until March 19, 1903.

186. **Cistothorus stellaris.**—Short-billed Marsh Wren. Rare migrant. Seen May 21, 1904, when it was well observed for ten minutes in long, coarse grass in a low swampy place.

187. **Telmatodytes palustris.**—Long-billed Marsh Wren. Only a pair or so known to breed in the remnants of the Bloomville marshes. Otherwise a rare migrant.

188. **Certhia familiaris americana.**—Brown Creeper. Fairly common in winter. November 7, 1904. April 29, 1904.

189. **Sitta carolinensis.**—White-breasted Nuthatch. Common resident.

190. **Sitta canadensis.**—Red-breasted Nuthatch. Common transient. May 21, 1904; June 10, 1905; May 15, 1906.

191. **Bæolophus bicolor.**—Tufted Titmouse. Common resident, but less common in winter.

192. **Parus atricapillus.**—Chickadee. Common resident. Nest with seven young May 19, 1906.

193. **Regulus satrapa.**—Golden-crowned Kinglet. Common migrant. October 6, 1902. May 15, 1906.

194. **Regulus calendula.**—Ruby-crowned Kinglet. Rather rare migrant. May 10, 1904, is the latest spring date.

195. **Polioptila cærulea.**—Blue-gray Gnatcatcher. Common migrant, but not common summer resident. April 18, 1903; April 15, 1904; April 20, 1906.

196. **Hylocichla mustelina.**—Wood Thrush. Common summer resident. Arrival: May 9, 1903; May 5, 1904; April 28, 1906. Departure: September 17, 1904. Nest with two eggs May 28, 1904.

197. **Hylocichla fuscescens.**—Wilson's Thrush. Common migrant. Arrival: May 9, 1903; May 10, 1904; May 11, 1906. September 17, 1904.

198. **Hylocichla aliciæ.**—Gray-cheeked Thrush. Not common migrant. May 11, 1906. September 17, 1904.

199. **Hylocichla swainsonii.**—Olive-backed Thrush. Common migrant. May 10, 1904; May 15, 1906. September 22, 1904.

200. **Hylocichla guttata pallasii.**—Hermit Thrush. Common migrant. April 18, 1903; April 15, 1904; April 20, 1906. October 13, 1904.

201. **Merula migratoria.**—American Robin. Common summer resident. It arrives early in March and departed November 7, 1904. A few remained all winter 1905-6. An albino was noted June 11, 1904. There was a roost in the trees of Jefferson street, Tiffin, in the fall of 1904, from 120 to 180 Robins resorted to the roost.

202. **Sialia sialis.**—Bluebird. Common summer resident. Arriving March 1, departing in November. A few remained all winter 1905-6.

203. **Helmintophila celata.**—Orange-crowned Warbler. May 10, 1904. Observed singing. Rare transient.

Introduced Species.

204. **Passer domesticus.**—English Sparrow. Abundant. Several albinos noted.

205. **Phasianus torquatus.**—Ring-necked Pheasant. Not common, but breeding. Nest found in 1901.

REMARKS ON THE SUMMER BIRDS OF LAKE MUSKOKA, ONTARIO.

BY B. H. SWALES AND P. A. TAVERNER.

During the summer of 1904 we were able to spend a short time on Gibralter Island, situated in Lake Muskoka, Muskoka District, Ontario. This is one of the largest of the many lakes of various sizes that fill the glacial furrows in the heart of the Laurentian formation back of Georgian Bay. The country is

noted for its rocky wildness and, although the shores are here and there occupied by the summer cottages of the tourists, their influence scarcely extends back from the lake farther than the eye can reach. The country has been lumbered over and all marketable timber extracted, but if it were not for the rotting pine stumps one sees on every hand the observer, when out of sight of the sparkling waters of the lake, might imagine himself buried in the primeval forest unprofaned by the intruding foot of civilized man. The country has, it is true, suffered the concomitant evils that follow the lumbermen, as the great expanses of burnt ridges manifest, with their gaunt gray skeleton pine standing like the monuments of a vanished age scarred black with fire and bleached with storms to every shade of soft and solemn grey. Scattered clearings exist here and there hemmed around with forest except where they manage to break through the leafy barrier to the lake or run up to the barred ridges from which the life of the soil has been burnt by repeated forest fires.

The Beaumaris side of the lake is settled to a greater extent than the opposite side, and the stage road from Beaumaris to Bracebridge runs through clearings of an older and more settled type. The Bala side, towards which Gibralter Island lies, exhibits all the characteristics of a new country whose agricultural future is almost hopeless. Hay and fodder for a few cattle and sheep and a little green stuff for home and tourist consumption is about all that is raised, and the harvesting among the stumps and rocks has to be done with the almost vanished scythe, while oxen and jumpers largely take the place of horse and farm wagon.

The principal forest growth is pine, both Norway and white, with considerable masses of hemlock scattered about and cedar thickets in the lower parts. Deciduous trees are, however, plentiful and "beech flats" are common enough, while the rest of the land is filled with forest growths of oak, maple, basswood, American hornbeam, and other hardy timber. The second growth is generally poplar mixed with white birch which usually succeeds the former short-lived growth and is in its turn replaced by maple and oak. In the latter stage in ex-

posed places a few struggling pines, pushing their way up and between their neighbors, give a forecast of what final type would triumph in the end if nature had full sway when the cycle is completed.

The shores are naturally wooded to the water's edge, and are generally rocky; marshes or swamp, except of the sphagnum order, about some little land-locked lake are very rare and in consequence the water birds that the innumerable little lakes would otherwise attract are almost entirely absent. The main body of the water fowl pass over this, what would otherwise be to them an attractive land, as quickly as possible and, if they stop at all, make as short a visit as is compatible with their needs.

One of the most interesting features of the avi-fauna of this country is the difference between the settled and the unsettled portions. The birds of the open are gradually increasing in the most extensive clearings around Bracebridge, but are never seen in the little slashings made by the homesteader on the other side of the lake. In the forest itself during the summer months bird life, to the observer, seems almost entirely absent, although in spring the woods are alive with migrants and the glorious summer evenings are filled with the melody of the Hermit and Wilson's Thrushes, with the silver whistle of the White-throated Sparrow rising above it all. During the period of our stay, however, all this was passed—the sweet songsters had left before the hosts of the fall migrants had arrived. We tramped often all day over a varied route that afforded a variety of country and for hours saw scarcely a single bird or heard a note in spite of the closest attention. Generally, however, early in the morning and before sunset we could find little bunches of warblers around a certain shore of the island, but it required quick work to observe or collect them as they were gone in but a few minutes, not to be found again.

The fact that struck us with most force during this time was the apparent absence of any strong migratory movement. There were migrants present, but their numbers were as nothing, considering the time of the year. When we left Detroit the great rush of migration had already started, and small and

large groups of migrating birds were to be met with at almost any point. We naturally expected to find analogous conditions up here, but in this were disappointed. During this same time at Guelph, about one hundred and twenty miles to the south, the migrations were in full swing and the northern forms were coming in almost daily. Many of the common summer residents had left Muskoka before we arrived. These were not in all cases species that hurry through the southern stations early in the season, but the late comers and long stayers, as White-throated Sparrows, Magnolia and Myrtle Warblers, and others. These birds all breed in Muskoka, the first very commonly, but of it we only saw *one* and of the others only one or two. Nor were other species from farther north much more common and it looked as if the resident birds had left before the more northern breeders had started to migrate. It may be held, of course, that in this vast extent of wooded territory, the migrants were so widely scattered as to be more easily overlooked than seen, but this hardly satisfies the conditions as we found them. The amount of hard work we put in and the ground we covered would *in this case* have yielded more individuals if this were the whole explanation. Be the reason what it may, the fact remains, that up here, just when we should expect the first great rush of the migrations, we found the forest and fields ornithologically almost dead and more resembling the quietness of the mid-breeding season than the first flush of the migrating one.

From August 24 until September 4 we were able to record a total of 59 species; a number of these were represented but by one or two specimens and few were common in the ordinary acceptation of the term. These peculiar conditions are interesting and suggestive and may give this report of the trip a little more value than it might otherwise have as a mere catalogue of birds seen.

Gibralter Island is about one half mile long and in places not more than half that distance in width. It is directly across the lake from Beaumaris. The rocks rise abruptly from the lake shore and form an extensive ridge heavily wooded, in the center, which culminates at the north end in a high promon-

tory from which one may view the beautiful lake country, dotted with its numerous wooded islands, for many miles.

Gavia imber.—Loon. One seen on September 2 flying down the lake in a driving rain storm. This species is decreasing in numbers each year at Muskoka. Formerly Taverner heard them on nearly every summer night from the island and they bred here and there throughout the region.

Larus argentatus.—Herring Gull. Fairly common. A few individuals were seen every day following the wake of the little lake steamers that pass up and down each day. The birds hang around Muskoka wharf and Gravenhurst Bay until the steamers go out, when the gulls follow after. They undoubtedly breed in Georgian Bay about thirty miles west.

Duck.—Species? A small flock of six birds passed down the lake on Sept. 2. We saw no others as there are no suitable feeding grounds to attract the birds.

Botaurus lentiginosus.—American Bittern. One bird flushed from a small marsh on Tondern Island on August 29. There was scarcely room here for the bird to turn around in. This is rather a rare species here, a pair or two breeds in Bear Bay, near Gravenhurst, and Taverner has seen it on Black's Creek on the west side of the lake.

Bonasa umbellus togata.—Canadian Ruffed Grouse. Fairly abundant. The extreme tameness of these birds was astonishing to us in contrast with the Michigan birds. One could approach at will within almost striking distance of the parents and brood and even then they would generally simply run out of the path without any attempt at flight. Of course when the shooting season is on this all changes.

Buteo platypterus.—Broad-winged Hawk. But two seen, one on the mainland August 29, the other lived on Gibralter and was observed every day. This is, however, the most abundant hawk here.

Falco sparverius.—Am. Sparrow Hawk. One seen August 29 flying over the clearing on Tondern Island. It is only on the eastern side of the lake where the most extensive clearings are that this species is to be seen here. Perhaps the lack of grasshoppers explains its absence elsewhere.

Falco peregrinus anatum.—Duck Hawk. During our present stay we failed to observe this species. It has, however, bred for many years on Crown Island just north of Gibralter and the nest has seldom been disturbed. Notwithstanding this fact the number of birds in this region seems to be restricted to a single pair. Taverner took a set of four eggs from this nest on May 23, 1898, and it is upon this one record that the various Ontario records in Macoun's Catalogue of Canadian Birds are based. On August 30th we visited this nest, which is situated on the side of a cliff on the highest portion of Crown

Island about 75 feet above the lake. The nest contained many bones of the Ruffed Grouse, Flicker, Blue Jay, and Pileated Woodpecker.

Antrostomus vociferus.—Whip-poor-will. One bird heard calling on the evening of August 26, two birds on August 27 from the mainland directly across from our cabin. None were heard after this date and we naturally supposed that they had left.

Ceryle alcyon.—Belted Kingfisher. One pair observed each day during our stay in the vicinity of the island. Where this species nests is unknown as the nearest place known to Taverner is around Bracebridge river which has in some places banks of considerable heights. In our vicinity on the lake rarely more than a single pair is seen and these are generally roaming about.

Dryobates villosus.—Hairy Woodpecker.—But one bird seen—on August 28. This is, however, a common resident species. There is some doubt as to the occurrence of **leucomelas** here. All specimens so far taken have been **villosus**...

Dryobates pubescens medianus.—Downy Woodpecker. A common species in all sections visited.

Sphyrapicus varius.—Yellow-bellied Sapsucker. Not uncommon in the higher portions of the island and on the mainland. Is much less abundant on the islands. Breeds.

Colaptes auratus luteus.—Northern Flicker. Fairly abundant on the adjacent mainland, rarer on the islands.

Chordeiles virginianus.—Nighthawk. One noted August 31, apparently one of the last birds of the season. A common summer resident.

Chætura pelagica.—Chimney Swift. A number were seen hawking over the lake every evening during our stay and were still present when we left September 4th. As there cannot be in this region enough chimneys to afford all the birds a nesting place the main body must use hollow trees. Every flue is, however, occupied.

Trochilus colubris.—Ruby-throated Hummingbird. One male seen August 31. This species is quite common here in the clearings, especially if there are any flowers about. Otherwise the bird would appear quite rare.

Myiarchus crinitus.—Crested Flycatcher. We observed but one bird, on August 29. The species is, however, quite common here, especially on Gibralter.

Sayornis phœbe.—Phœbe. An abundant bird on the island and in the various clearings around Beaumaris. One pair has nested for many years on the porch of the Taverner cottage and also against the smooth sides of the boat-house.

Nuttalornis borealis.—Olive-sided Flycatcher. In the wooded sections of the mainland we observed what we were certain were this species, but as we did not take any specimens did not prove the matter. The birds in question were generally confined to the dense

woods, where they were perched at the top of some tall dead pine. This species is, however, an abundant bird in this region.

Horizopus virens.—Wood Pewee. This was one of the most abundant species on the islands and mainland until September 1, after this date we failed to either see or hear it.

Empidonax minimus.—Least Flycatcher. Not uncommon, noted about every day on the island and mainland.

Cyanocitta cristata.—Blue Jay. We were able to find but *one* bird, which was rather surprising, as this is usually an abundant bird here. The only explanation we can offer is that the resident birds had left and the northern birds had not yet come down.

Corvus brachyrhynchos.—American Crow. Abundant.

Agelaius phœniceus.—Red-winged Blackbird. But one male seen, generally common in certain localities as Bear Bay, or back of Tondern Island. Unless one happens to meet with a flock in these suitable localities the species appears to be quite rare.

Quiscalus quiscula æneus.—Bronzed Grackle. One seen August 26, another at Gravenhurst walking on the logs in the bay, on September 4. They are generally common here and on parts of Tondern Island.

Carpodacus purpureus.—Purple Finch. Three birds were met with near the head of Gibralter Island on August 27, another on September 3.

Astragalinus tristis.—American Goldfinch. A common species in the cleared portions of Tondern Island and on the mainland back of Beaumaris.

Pocœcetes gramineus.—Vesper Sparrow. We found this well distributed in the fields running back from Beaumaris on August 29. Three more were noted on August 31.

Zonotrichia albicollis.—White-throated Sparrow. We saw but one bird—on the day of our arrival. This is another case of the migrants leaving before the northern birds come in. This is a regular common breeder on Gibralter. Mr. A. B. Klugh at Guelph reported many migrants there some time before we left Muskoka.

Spizella socialis.—Chipping Sparrow. Rather common on Tondern Island, near Beaumaris. A few were around our cabin on Gibralter.

Junco hyemalis.—Slate-colored Junco. Abundant all over the island and the country bordering the lake shore—much rarer inland.

Melospiza cinerea melodia.—Song Sparrow. Rare except in the immediate vicinity of the clearings on Tondern Island and on the mainland. Is generally common directly across from the island on the edges of Broadlay's farm.

Hirundo erythrogaster.—Barn Swallow. Observed in some numbers on August 28 and 29 near cleared land. Formerly nested in Broadley's barn on the adjacent mainland.

Iridoprocne bicolor.—Tree Swallow. In the little marsh back of the hotel at Beaumaris we saw one flying over the water on August 29.

Ampelis cedorum.—Cedar Waxwing. An abundant species everywhere—we found it present on all the islands visited, on the mainland, etc.

Vireo olivaceus.—Red-eyed Vireo. A common species on the island. Several nests we examined of the past summer's construction were beautiful little affairs constructed on the outside mainly of white birch bark.

Mniotilta varia.—Black and White Warbler. Fairly common in all parts of Gibralter Island.

Compsothlypis americana usneæ.—Northern Parula Warbler. Fairly common, on August 28 and 29 we saw two on each day and one on August 31 and September 1.

Dendroica cærulescens.—Black-throated Blue Warbler. A pair or so seen throughout our stay on the island, several seen August 29 on the mainland.

Dendroica coronata.—Myrtle Warbler. Only one bird noted, a female, taken in the pines directly back of our cabin.

Dendroica maculosa.—Magnolia Warbler. But three birds found—two on August 29, and one on September 4. This is a common migrant here and we think that a few pairs remain and breed.

Dendroica blackburniæ.—Blackburnian Warbler. Fairly common, three seen August 29, a few individuals at different times during our stay. This is a fairly common breeder here. Taverner shot quite a large, young Cowbird being fed by one of these warblers in September, 1896.

Dendroica striata.—Black-poll Warbler. One taken September 1. No others recorded.

Dendroica virens.—Black-throated Green Warbler. This was by far the most abundant warbler present until September 2d, after this date we failed to find it. A common breeder here.

Dendroica vigorsii.—Pine Warbler. Rather common until September 1st, we did not find it later.

Seiurus aurocapillus.—Oven-bird. While working through a low part of the island on August 29th we flushed one bird. Is a common summer resident.

Geothlypis trichas brachidactyla.—Northern Yellow-throat. We secured a male in the small marsh back of Beaumaris on August 29. This is not a common species here.

Wilsonia canadensis.—Canadian Warbler. Not uncommon. Noted at various times during our stay.

Setophaga ruticilla.—American Redstart. Fairly common, observed every day.

Troglodytes aëdon.—House Wren. We found this common on the

outskirts of Beaumaris on August 29. It was confined to the brush heaps and the snake fences.

Olbiorchilus hiemalis.—Winter Wren. But two birds seen—one on September 1, another on the 4th. This is a fairly common summer resident on the island and breeds in the dense brush.

Certhia familaris americana.—Brown Creeper. Very common everywhere.

Sitta caroliensis.—White-breasted Nuthatch. Common.

Sitta canadensis.—Red-breasted Nuthatch. On September 1 we saw one in a small birch near the cabin which was secured. No others were noted.

Parus atricapillus.—Chickadee. An abundant species everywhere.

Hylocichla fuscescens.—Wilson's Thrush. Two birds seen, on August 27 and 30. This is a common summer bird on the island.

Hylocichla guttata pallasii.—Hermit Thrush. On September 3rd we secured one bird in the center of the island. A common breeder here.

Merula migratoria.—American Robin. On the island this was far from common but we found it much more numerous on the mainland near Beaumaris.

Sialia sialis.—Bluebird. On August 29, on quite an extended trip on the mainland back of Beaumaris, we found this present in some numbers in all cleared land. Five were seen August 31.

Detroit, Mich.

TWO ALL-DAY RECORDS IN NORTHERN OHIO.

BY LYNDS JONES.

There are migrations and migrations of the birds in May, and the migrations which appeal most to the most ardent among us are those which certain conditions of weather make conspicuous by reason of the great abundance of bird life on one or more days. As far as northern Ohio is concerned the experiences of more than ten years in the study of the migrations make it possible to formulate certain laws which govern the movements of the birds northward across that region. These laws are not new, nor are they laws which have not been announced already, but they are of sufficient importance to bear repetition.

Considered purely from the standpoint of migration, warm weather accompanied by clear or fair skies during the night

incite the birds to movement northward. Cloudy nights—with the sky obscured—are unfavorable for bird movements even if the weather be warm. Cold nights, even if the sky be clear, do not induce much movement. Some birds migrate on cold clear nights. For a large movement of the birds, assuming that the time of year has arrived for such movement, at any given place which will be manifest on the next day, two conditions seem to be necessary. First, the temperature must be relatively high and the sky clear or nearly so for many leagues south of the given place; and second, to the north of the place the sky must be overcast, or the temperature low, in that place or immediately north of it.

During the present season the weather conditions during the last week in April and the first week in May were favorable for the northward movement of the smaller and later migrating birds over most of the Mississippi Valley, and eastward, at least as far as Lake Erie and southern Michigan. Most of the second week in May was cold, with northerly winds prevailing. Many birds had arrived during the favorable weather, but remained in northern Ohio and adjacent regions because of the storm and cold of the second week in May. Then followed favorable weather south, but cloudiness over Lake Erie nights up to May 16. The birds moved up to the cloud barrier and remained there. On the 14th and 15th the country teemed with all sorts of birds except the divers and ducks which had gone north earlier. Not only were species unusually numerous, as the appended lists will prove, but individuals were enormously numerous.

These two lists—Rev. W. F. Henninger, for Tiffin, Ohio, May 15th; and the writer, for Oberlin, May 14th—are given together, and the appended list of birds which were not seen but were clearly present, for the purpose of indicating the status of bird life during these two days as far as could be determined. It will be noticed that the 129 species found at Oberlin on the 14th establishes a new record for that place. However, the conditions which so profoundly influence so large a proportion of the whole bird life of a region and not the size

of the list, are the important things. These "All day" studies merely furnish the data.

The two lists which are appended may be considered fairly representative of the north-western parts of the State of Ohio during May 14th and 15th. It may be argued that because the lists were not made on the same day they are not therefore comparable. To that I would reply that the weather was such that the bird population must have been practically the same on the two days. The region about Tiffin is further removed from Lake Erie than Oberlin, and nowhere approaches near enough to it to be influenced by it, and that fact will explain the lack of the distinctively water birds, but otherwise the two regions are alike. The Oberlin region, therefore, supplies the lake shore conditions which complete the northern Ohio conditions affecting bird movements.

At Oberlin, on the 14th of May, the day opened rainy, with nearly continuous showers until nearly mid-day, with clearing skies in the afternoon. At 2:30 a. m. the temperature stood at 58, but a northerly breeze, shifting to north-easterly, and increasing to brisk, cooled the air to 48 during nearly the entire day. The early part of the day was spent in the woods, fields, and orchards south of Oberlin, the afternoon in work along the lake shore and the woods, fields and swamps bordering the lake. Thirteen out of a possible sixteen hours were spent a-field.

At Tiffin, on May 15th, the day began partly cloudy, but clearing, with a temperature of 50, ranging to 80 by mid-afternoon, with almost no wind. The work covered the region about Tiffin, including every sort of topography. The work began at 3:30 a. m., and closed at 8:30 p. m., with about two hours lost during the day at times when there was little probability of loss in records.

The participants in this work were Rev. W. F. Henninger, Tiffin, and Lynds Jones, Oberlin. It is to be regretted that other regions in the northern parts of the state are not also represented.

Species recorded at both places—Tiffin and Oberlin.

Green Heron,	Scarlet Tanager.
Yellow-legs.	Barn Swallow.

Solitary Sandpiper.
Spotted Sandpiper.
Killdeer.
Bob-white.
Mourning Dove.
Red-tailed Hawk.
Sparrow Hawk.
Yellow-billed Cuckoo.
Black-billed Cuckoo.
Belted Kingfisher.
Hairy Woodpecker.
Downy Woodpecker.
Red-headed Woodpecker.
Northern Flicker.
Chimney Swift.
Ruby-throated Hummingbird.
Kingbird.
Crested Flycatcher.
Phoebe.
Wood Pewee.
Green-crested Flycatcher.
Traill's Flycatcher.
Least Flycatcher.
Blue Jay.
American Crow.
Bobolink.
Cowbird.
Red-winged Blackbird.
Meadowlark.
Orchard Oriole.
Baltimore Oriole.
Bronzed Grackle.
American Goldfinch.
Vesper Sparrow.
White-crowned Sparrow.
White-throated Sparrow.
Chipping Sparrow.
Field Sparrow.
Song Sparrow.
Lincoln's Sparrow.
Swamp Sparrow
Towhee.
Cardinal.
Rose-breasted Grosbeak.
Indigo Bunting.
Grasshopper Sparrow.
Rough-winged Swallow.
Bank Swallow.
Cedar Waxwing.
Migrant Shrike.
Red-eyed Vireo.
Warbling Vireo.
Yellow-throated Vireo.
Black and White Warbler.
Blue-winged Warbler.
Golden-winged Warbler.
Nashville Warbler.
Tennessee Warbler.
Northern Parula Warbler.
Cape May Warbler.
Yellow Warbler.
Black-throated Blue Warbler.
Myrtle Warbler.
Magnolia Warbler.
Cerulean Warbler.
Chestnut-sided Warbler.
Bay-breasted Warbler.
Black-poll Warbler.
Blackburnian Warbler.
Black-throated Green Warbler.
Palm Warbler.
Oven-bird.
Water-Thrush.
Northern Yellow-throat.
Yellow-breasted Chat.
Wilson's Warbler.
Canadian Warbler.
American Redstart.
Catbird.
Brown Thrasher.
House Wren.
White-breasted Nuthatch.
Tufted Titmouse.
Chickadee.
Blue-gray Gnatcatcher.
Wood Thrush.
Wilson's Thrush.
Olive-backed Thrush.
Hermit Thrush.
American Robin.
Bluebird.

Birds recorded at Tiffin by W. F. Henninger not recorded at Oberlin.

Sharp-shinned Hawk.
Yellow-bellied Flycatcher.
Purple Martin.
Blue-headed Vireo.
Pectoral Sandpiper.
Mourning Warbler.
Pine Warbler.
Red-breasted Nuthatch.
Golden-crowned Kinglet.

Birds recorded at Oberlin by Lynds Jones not recorded at Tiffin.

Herring Gull.
Common Tern.
American Bittern.
Great Horned Owl.
Yellow-bellied Sapsucker.
Whip-poor-will.

King Rail.
Virginia Rail.
Sora.
Florida Gallinule.
American Woodcock.
Least Sandpiper.
Greater Yellow-legs.
Bartramian Sandpiper.
Semipalmated Plover.
Marsh Hawk.
Red-shouldered Hawk.
Bald Eagle.
Barred Owl.
Screech Owl.
Prairie Horned Lark.
Rusty Blackbird.
Savanna Sparrow.
Cliff Swallow.
Tree Swallow.
Orange-crowned Warbler.
Prairie Warbler.
Louisiana Water-Thrush.
American Pipit.
Winter Wren.
Short-billed Marsh Wren.
Long-billed Marsh Wren.
Ruby-crowned Kinglet.
Gray-cheeked Thrush.

Species not recorded which were certainly in northern Ohio on the days when these records were made.

Black Tern.
Least Bittern.
Ruffed Grouse.
Cooper's Hawk.
American Long-eared Owl.
Nighthawk.
Carolina Wren.
Lesser Scaup Duck.
Great Blue Heron.
Turkey Vulture.
Broad-winged Hawk.
Red-bellied Woodpecker.
Lark Sparrow.

It thus appears that there were not less than 150 species of birds in northern Ohio during the period covered by May 14 and 15. Of these 138 were actually recorded.

A NEW RECORD FOR THE PRAIRIE WARBLER IN OHIO.

BY W. F. HENNINGER.

On May 11th, at about 3 p. m., I ran across four individuals of the Prairie Warbler (Dendroica discolor) in our favorite Warbler woods here, one and one-half miles south-east of Tiffin. Some of the tall timber in these woods was cut a year ago and on some saplings, with Myrtle Warblers all around me, I spied these rarities, and was favored by all four with their song, so frequently heard last year in Virginia and southern Ohio. Evidently they were migrants, as on May 15th, on our "All day with the birds," when I wanted to show Mr. Karl Heilmann these birds, none were to be found, in spite of the most diligent and painstaking search. This is a new record for the Prairie Warbler in the state, and especially interesting, as none seem to have been reported from this corner of our commonwealth.

THE WILSON BULLETIN.

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Official Organ of the Wilson Ornithological Club.

Edited by LYNDS JONES.

PUBLISHED BY THE CLUB, AT OBERLIN, OHIO.

Price in the United States, Canada and Mexico, 50 cents a year, 15 cents a number, postpaid. Price in all countries in the International Postal Union, 65 cents a year, 20 cents a number. Subscriptions may be sent to Lynds Jones, Oberlin, Ohio, or to Mr. Frank L Burns, Berwyn, Penn.

EDITORIAL.

This issue of the Bulletin will follow some of you to the field of your summer outing, and will find others in the midst of preparations for carrying out the plans for the summer. To such, and to all, we wish to offer this word of greeting, and this expression of the hope that the summer may be full of all best things. May one of the best things be some new information of the lives of some birds.

Studies of the birds in the summer are not usually pursued with the vigor which is given to studies of the migrations, because of the natural difficulties which summer conditions present. It is for that reason that we urge more persistent study on the part of all during this time. Did you ever notice that most of our bird literature is either strangely silent or at least very general in statements about the summer habits of most birds? The summer field is such an untrodden one that one cannot enter it without the assurance that new facts await him. Surprises quite as exciting as any which the migrations bring await the summer student of the birds Plan your work for it this once.

The editor spent a delightful three days with Dr. W. E. D. Scott and his family of birds at the newly established Worthington Society for the Investigation of Bird Life, at Shawnee-on-Delaware. early in May. He never before saw our native birds so thoroughly contented and normal in their captivity that it was impossible to tell the captives from the wild birds which alighted upon the cages.

except that the captives seemed to be the better favored. If one were inclined to conscientious scruples against keeping wild birds in confinement the sight of this happy and contented family would certainly sweep the scruples away. We feel a lasting gratitude to Mr. Worthington for his interest and liberality in making this venture possible, and we heartily congratulate Dr. Scott upon the beginning of a realization of the fruition of a life given to a greatly needed work such as he has undertaken. May his work prosper and his days be multiplied to carry forward this work.

Carefully prepared lists of summer birds from regions not already fully covered by publis hed lists, are solicited. Faunal studies of this sort will be worth publishing until the country is fully covered, or until we have learned everything there is to learn about distribution. Along with any list there should go such notes relating to life histories as can be learned, particularly as to the close of the season of song, and exact dates of nesting. Copious notes made while one is working in the field with the birds are valuable assets. Often what seem to be purposeless notes at the time they are made later prove to be the key to the solution of some vexed question. The best memory may prove fickle.

Before the next number of the Bulletin goes to press the southward migrations will have begun. How much do we really know about when the southward movement begins in our own locality, or where we spend the summer? Isn't it worth while to begin to learn about it? Here on Lake Erie some of the sandpipers which nest about Hudson's Bay, supposably, are to be found on the sandy shores and in the mud flats early in July, and some of the warblers are evidently moving southward early in August. On the other hand, some birds seem to leave for the south before they actually do.

SOME NOTEWORTHY LORAIN COUNTY RECORDS FOR 1905.

A solitary White-throated Sparrow was found wintering in the gorge of Vermilion river near Brownhelm Mills, on January 1. The bird was clearly in good physical condition. This is the first recorded instance of the wintering of this species.

Hoyt's Horned Lark was again found, in company with Prairie Horned Larks, four individuals on February 22. The difference of coloration and size was marked. These four inclined to separate themselves from the others and grouped together.

A company of six Bronzed Grackles spent the winter in Oberlin.

Two or more Robins were fed all winter in Oberlin.

Only two Lapland Longspurs have been recorded for the county —March 5. Many more are usually found during the spring weeks.

A solitary Snowflake was found feeding with a company of Prairie Horned Larks, on February 16. No others were seen during the winter.

A Kirtland's and a fine male Prairie Warbler were recorded on May 2. The birds were feeding close together and permitted an approach within twenty feet, singing all the time. The Kirtland's was without markings on the center of the breast. This is the third record for Kirtland's Warbler.

A solitary Hooded and a solitary Kentucky Warbler were recorded on May 15, both singing lustily. These birds have recently made their appearance in the county. Neither have yet been found except during the height of the spring migrations.

There was a notable scarcity of Goldfinches during the last week in March and the first three weeks in April. Only a few were recorded during the winter. The birds became common again by the 30th of April, and before any had completed the spring moult. A similar scarcity is reported to me from south-eastern Michigan. Were they common anywhere during this period?

SPECIAL PAPERS RECEIVED.

Cassinia, A Bird Annual. Proceedings of the Delaware Valley Ornithological Club of Philadelphia. 1905. Issued February, 1906.

On a Collection of Birds and Mammals from the Colorado Delta, Lower California. By Witmer Stone, with Field Notes by Samuel N. Rhoads. From the Proceedings of The Academy of Natural Sciences of Philadelphia, September, 1905. Issued December 6, 1905.

On a Collection of Birds from British East Africa obtained by Mr. George L. Harrison, Jr. By Witmer Stone. From the Proceedings of The Academy of Natural Sciences of Philadelphia, November, 1905. Issued January 24, 1906.

The Mammals of Colorado. By Edward R. Warren. Colorado College Publications, General Series No. 19.

CURRENT PUBLICATIONS RECEIVED.

American Ornithology, Vol. V, No. 12; Vol. VI, Nos. 1 to 5.

Bird-Lore, Vol. VII, No. 6; Vol. VIII, Nos. 1, 2.

Boys and Girls, Vol. V, Nos. 3 to 6; Vol. VI, Nos. 1 to 5.

Bulletins 233 to 237, Michigan Agricultural College Experiment Station.

Condor, The, Vol. VII, No. 6; Vol. VIII, Nos. 1, 2.

Journal of the Maine Ornithological Society, Vol. VII, No. 4; Vol. VIII, No. 1.

Nature-Study Review, Vol. II, Nos. 1, 2.

Ornithologisches Monatschrift, Vol. XXX, Nos. 9 to 11; Vol. XXXI, Nos. 1 to 6.

Monthly Bulletin, The Pennsylvania State Department of Agriculture, Vol. III, Nos. 6 to 12.

Oologist, The, Vol. XII, Nos. 11, 12; Vol. XIII, No. 1.

Ohio Naturalist, The, Vol. VI, Nos. 2 to 7.

Ontario Natural Science Bulletin, The, No. 2.

Zoological Society Bulletin, Nos. 19, 20, 21.

NOTICES OF RECENT LITERATURE.

I. Birds from Mindoro and Small Adjacent Islands.

II. Notes on Three Rare Luzon Birds.

By Richard C. McGregor. Bureau of the Government Laboratories. No. 34. October, 1905. With 18 plates and 27 figures.

These two papers continue the excellent work which Mr. McGregor is doing toward completing our knowledge of the birds of our far eastern island possessions. Three new species are described, and much information concerning life history and more extensive descriptions of plumages are given. L. J.

A Hand-List of the Birds of the Philippine Islands. By Richard C. McGregor and Dean C. Worcester. Bureau of the Government Laboratories, No. 36, January, 1906.

This "Hand-List" follows the form of Dr. R. B. Sharpe's "Hand-List of Birds." Dr. Worcester prefaces the Hand-List proper with an interesting and valuable discussion of the zoological relationships of the islands among themselves. The Hand-List is concerned chiefly with giving the names of the species and their distribution. Additional information is supplied in foot-notes where it seems called for. There is a complete index to genera and species, and another index to the orders, suborders, families, and sub-families of the Philippine birds. It is a valuable and timely contribution to ornithological literature. L. J.

The Grouse and Wild Turkeys of the United States, and Their Economic Value. By Sylvester D. Judd. Bulletin No. 24, Biological Survey, U. S. Department of Agriculture.

In this valuable paper Dr. Judd gives us the distribution, food habits, and methods for preservation and propagation of this group of game birds. Especial attention is called to the great economic

value of the grouse and wild turkeys, both from their habit of eating insects and weed seeds, and because of their value as an article of diet. It is earnestly to be hoped that active measures will at once be taken to repopulate the regions now depopulated by these birds, which were once well stocked. L. J.

Bird Photography in Norway. By R. W. Shufeldt. Reprint from The Popular Science Monthly, May, 1906.

Dr. Shufeldt here gives us a delightful glimpse of Norway bird life in pen and camera pictures. Certainly Norway is not a whit behind America in catching the birds with the lens. L. J.

An Ecological Survey in Northern Michigan. Prepared under the direction of Chas. C. Adams. A Report from the University Museum, University of Michigan, published by the State Board of Geological Survey as a part of the Report for 1905. Copiously illustrated with maps and half-tones.

This ecological study covers "the plant and animal life of the Porcupine Mountains in Ontonagon County and on Isle Royale." The Porcupine Mountains were studied from July 11 to August 13, and Isle Royale from August 13 to September 5. As far as the birds were concerned they were seen only under the conditions of fall migration. Eighty-nine species of birds were recorded on the Porcupine Mountains, and 81 on Isle Royale. It is to be hoped that this work can be supplemented by studies during the breeding season of the birds. L. J.

We are pained to learn of the death of our fellow member, a sketch of whose life from the pen of one of his close associates is here quoted from a local paper.

"Alternately reciting the apostle's creed and repeating parts of the Lord's prayer the soul of LaRue K. Holmes, son of Colonel B. P. and Georgiana K. Holmes, passed to its eternal reward. The end came suddenly at his home on Pine Grove avenue, early Thursday morning. The immediate cause of death was rheumatism of the heart complicated with other weaknesses. Though a young man of quiet, studious tastes, young Holmes was well known in Summit, N. J., and his death will come as a shock to his many friends.

"Born December 2nd, 1883, he was little over twenty-two years of age. At an early age he became a communicant in the Episcopal church and died in that fellowship. A profound lover of nature, he developed while still a boy into a zealous student of natural history. Botany, entomology, and ornithology claimed his attention according to his varying mood. He could not cross a field or pass through a belt of timber without exploring hidden nooks for specimens of interest to the naturalist.

"His great passion was for birds, whose habits and habitat he studied with unwearied interest. Had he lived he might have won distinction as an ornithologist. Already he had served as curator in the museum of Natural History, New York, and achieved honorable mention for his work in classifying the recent accessions to their department of ornithology. He was also a correspondent of the Smithsonian Institute at Washington, and exchanged specimens with them. Though affable and gracious in manner, he was naturally reserved and preferred solitude to society. His bereaved mother and father will have the sympathy of this entire community in an affliction which removes their last child and leaves their home without one for whom they lived and labored."—W. W. Giles.

It is my sad duty to chronicle the death of our fellow member, LaRue K. Holmes, at Summit, N. J., on May 10th, 1906, at the home of his parents, Colonel B. P. and Georgiana K. Holmes. The following touching note from the bereaved mother gives the particulars far more fittingly than pen of mine:

DEAR SIR:—Our precious LaRue, recently assistant curator at the Museum of Natural History, New York, entered into rest yesterday, after intense suffering for four months, from rheumatism of the heart, singing a hymn and repeating the Apostles' creed and Lord's Prayer. Patient beyond words, almost unspotted by contact with the world, artistic in nature and devoted to the study of his beloved birds, he passed to the spirit world in triumph through Christ.

Yours, in sorrow, which should be rejoicing.

GEORGIANA KLINGLE HOLMES.

He was elected an associate member of the American Ornithologists Union in 1902, and a corresponding member of the Delaware Valley Ornithological Club in 1904, and his most elaborate paper, "The short-billed Marsh Wren (*Cistothorus stellaris*) in Eastern Pennsylvania and New Jersey," in the Cassinia for 1904, suggests careful and critical research and exceptional ability.

The writer had the pleasure of meeting him at a gathering of ornithologists in Philadelphia a few years since and found him quiet, affable, enthusiastic, peculiarly attractive, and soon after entering into correspondence with him, induced him to join the Wilson Ornithological Club as an active member. He contributed an excellent paper entitled "The Summer Birds of Summit, Union County, N. J.," to the WILSON BULLETIN for March, 1905. In their bereavement for this their last child, the sorrowing parents will have the sympathy of all the members of the Wilson Ornithological Club.

FRANK L. BURNS.

SCREECH OWL (Megascops asio)
young of the year.

THE
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MY NEIGHBORS' HOMES IN CLAYTON COUNTY, IOWA.

BY ALTHEA R. SHERMAN.

In summer I have many neighbors, but in one class only do I feel a consuming interest—an interest that consumes much time and energy. Within one-fourth of a mile of our home thirty species of birds are likely to breed every year. Some years there may be a failure on the part of two or three of these species to come quite within this limit, but they are very near. The nests of sixteen of these, besides the eggs of the Cowbird, have been found upon our grounds, and there is very good circumstantial evidence to show that four common birds, the Bobolinks, Meadowlarks, Dickcissels and Maryland Yellow-throats have had their nests here, although I have failed to find them.

In the summer of 1905 on our home plot eleven species nested whose nests were found, nine being occupied at one time. These eleven were the Mourning Dove, Flicker, Kingbird, Phoebe, Red-winged Blackbird, American Goldfinch, Chipping Sparrow, Brown Thrasher, House Wren, American Robin, and Bluebird. The five species that have nested with us but did not that year were the Bobwhite, Chimney Swift, Song Sparrow, Barn Swallow and Catbird.

Of the other species within the quarter of a mile limit the Cliff Swallow breeds abundantly if undisturbed; Vesper Sparrows, and Prairie Horned Larks are common away from the

houses. The nearest ravine is the haunt of a Killdeer whose nest is sometimes found beside a hill of corn; for years a pair of Baltimore Orioles have swung their nestlings' cradle from the twigs of a large cottonwood in preference to a widespreading elm directly across the street. Red-headed Woodpeckers have three nesting sites, two are in maple trees in private yards, and the third is in the stump of a cottonwood tree near the school-house. A Warbling Vireo sings from the tops of the tall trees and it is difficult to locate his family nursery.

A pair of Blue Jays, contrary to their general reputation for shyness while breeding, have chosen hotel life, and one summer built their nest in the branches of an apple-tree overhanging the garden walk. The second summer thereafter they built in a small spruce tree whose boughs nearly touched the front porch of the hotel. Chimney Swifts build in the chimneys of the Methodist church and in a store building, while the White-rumped Shrikes choose for raising their young the evergreen trees in the cemetery and certain trees on the County Fair grounds. Hummingbirds are not uncommon, but their nests have not been found in this particular territory.

Were our bird neighborhood described by a radius of two miles the area would embrace a large grove to the westward and on the east reach to the woodlands of the Mississippi River. Here are found the breeding places of Hawks, Owls, the Prairie Hen, Sora, Cuckoos, Nighthawks, Wood Pewee, Crow, Field Sparrow, Towhee, Rose-breasted Grosbeak, Indigo Bunting, Scarlet Tanager, Red-eyed Vireo, Yellow Warbler, American Redstart, White-breasted Nuthatch, Blue-gray Gnatcatcher, and probably other species.

That pestiferous nuisance, the English Sparrow, claims a few words. In a great grain-growing region such as is Iowa he thrives wonderfully, every old straw stack and straw-covered shed affording nesting places for a score of his kind. His ability to carry from farm to farm the germs of contagious diseases of poultry and swine make him a serious menace to the farmers and the children would do well to hunt sparrow eggs as diligently as those of the fowls.

In a census for July 4th, 1906, the birds observed from my

own doorway are those given here. In taking such a census it is difficult to say, for example, whether one sees several Meadowlarks, or sees the same bird several times, therefore I number only those of a species that were observed at the same time. They were: 1 Mourning Dove, 4 Flickers, 1 Red-headed Woodpecker, 1 female Hummingbird, a pair of Kingbirds nesting, 1 male Phoebe, numerous Bobolinks, 4 male Red-winged Blackbirds, 1 Meadowlark, 2 male and 2 female Goldfinches, Chipping Sparrows, a pair of Song Sparrows having nest with four eggs, 1 male Dickcissel, numerous Swallows, 3 White-rumped Shrikes, 1 Warbling Vireo, 2 male Maryland Yellow-throats, a pair of Catbirds nesting, a pair of Wrens with nestlings, numerous Robins, a pair of Bluebirds, nesting. Twenty-one species in all and on days closely following Bob-whites, Cowbirds, Purple Grackles and Brown Thrashers were seen.

COMMON BIRDS OF WHITTIER, CALIFORNIA.

BY ESTHER CRAIGMILE.

Whittier is located fourteen miles southeast of Los Angeles, and twenty miles from the Pacific Ocean. It is a hillside town standing on the mesa of the Puente Hills, which bound it on the north and east, and commands a fine view of the rich valley to the south and west. Beyond the hills lies the San Gabriel Valley bounded on the north by the Sierra Madre range. From the summit of the Puentes one gets a good view of the patchwork effect of the valley ranches with the variegated foliage which orange, lemon, olive, and walnut produce.

Pepper and Eucalyptus trees are conspicuous in town, while live oaks and sycamores are found in the canyons. The hills are green after the rains begin. Bright yellow mustard assuming the proportions of small trees covers all uncultivated regions. Weeds of all kinds thrive during the rainy season. These weed patches are an eye-sore, yet they afford desirable shelter for birds and abundant food during the dry season.

This list is taken from my notes which date from November

7, 1905, to May 7, 1906. It covers observations in Whittier, the Puente Hills, San Gabriel valley and the beach. Mrs. Bailey's Birds of Western United States, Mrs. Wheelock's Birds of California, and a short interview with Professor Joseph Grinnell, were the sources of my authority.

Residents.

Sayornis nigricans. Black Phœbe.—Common Nesting on porches.

Scolecophagus cyanocephalus. Brewer's Blackbird.—Abundant.

Carpodacus mexicanus frontalis. House Finch.—Abundant.—Destructive to fruit buds.

Zenaidura macroura. Mourning Dove.—Common, especially in the hills and canyons.

Lanius ludovicianus gambeli. California Shrike.—Especially common in town.

Pipilo fuscus senicula. Anthony's Towhee.—Abundant in towns, hills, and valley.

Astragalinus psaltria. Arkansas Goldfinch.—Abundant.

Astragalinus tristis salicamans. Willow Goldfinch.

Polioptila californica. Black-tailed Gnatcatcher.

Cathartes aura. Turkey Vulture.—A constant sight soaring above hills.

Calypte anna. Anna's Hummingbird.—Common.

Falco sparverius phalœna. Desert Sparrow Hawk.—Common in the hills.

Mimus polyglottos leucopterus. Western Mockingbird.—Not much in evidence in fall and early winter. Adorning almost every chimney in spring when they sing jubilantly.

Sturnella magna neglecta. Western Meadowlark.—Common.

Aphelocoma californica. California Jay.—Common in canyon trees, rare in town.

Colaptes cafer collaris. Red-shafted Flicker.—Common in trees of canyons, rare in town.

Catherpes mexicanus conspersus. Canyon Wren.—Three records in canyon walks.

Chondestes grammacus strigatus. Western Lark Sparrow.—Found in large and small flocks in winter, in pairs in spring.

Anthus pensilvanicus. Pipit.—Two records. Solitary birds in ranch fields.

Dryobates nuttalli. Nuttal's Woodpecker.—Rare in canyon trees.

Larus occidentalis. Western Gull.—Abundant on the beach.

Larus delawarensis. Ring-billed Gull.—Rare. Only two records on the beach.

Geococcyx californianus. Road-runner.—Two records. Seen in the valley from the electric car window.

Fulica americana. American Coot.—Commonly seen from November until May. They may nest in this locality.

Hydrochelidon nigra surinamensis. Black Tern.—One doubtful record on the beach.

Melospiza cinerea cocperi. San Diego Song Sparrow.—Common.

Corvus americanus hesperis. California Crow.—Fairly common.

Parus inornatus. Plain Titmouse.—In trees of canyons.

Lophortyx californicus vallicola. Valley Partridge.—Abundant in hills and canyons.

Toxostoma redivivum pasadenense. Pasadena Thrasher.—Common resident.

Xenopicus albolarvatus. White-headed Woodpecker.—Rare in large sycamores in canyons.

Heleodytes brunneicapillus. Cactus Wren.—One record, in dry San Gabriel river bed.

Pocecetes gramineus confinis. Western Vesper Sparrow.—Rare. One small flock in the valley is the only record.

Agelaius phœniceus neutralis. San Diego Red-wing.—Abundant in the marshes.

Speotyto cunicularia hypogæa. Burrowing Owl.—Common. Nesting in holes in the ground.

Psaltriparus minimus californicus. California Bush Tit. Rare in my records.

Troglodytes ædon parkmanii. Pacific House Wren. Singing wildly from February through spring. Nesting in hollow trees or in holes in the canyon.

Geothlypis trichas arizela. Pacific Yellow-throat.—Commonly seen from February. Perhaps resident.

Pipilo maculatus megalonyx. Spurred Towhee.—Common in weedy fields or orchards.

Pelecanus californicus. California Brown Pelican.—Common at Long Beach in spring.

Larus hermanni. Hermann's Gull.—The most common gull on the beach.

Numenius sp.?. Curlew.—A flock of nine long billed specimens were seen at Long Beach in April, but the species could not be determined.

Larus californicus. California Gull.—Rare.

Otocoris alpestris actia. California Horned Lark. Reported as common, but I have but one record.

Vireo huttoni. Hutton's Vireo.

Dryobates pubescens gairdnerii. Gairdner's Woodpecker.—Common in lowlands willows.

Chamæa fasciata. Wren-tit.—Rare.

Polioptila cærulea obscura. Western Blue-gray Gnatcatcher.—Found in winter in large flocks feeding among weeds along arroyos.

Winter Visitants.

Sialia mexicana occidentalis. Western Bluebird.—Found in small flocks during the winter.

Dendroica auduboni. Audubon's Warbler.—Abundant.

Regulus calendula. Ruby-crowned Kinglet.—Abundant.

Buteo borealis. Red-tailed Hawk.—Possibly a resident.

Merula migratoria propinqua. Western Robin.—Common in flocks. Found in parks, in town, or in canyon trees.

Oidemia deglandi. White-winged Scoter.—Abundant in surf at Santa Monica and Venice in November. Possibly a resident.

Gavia pacifica. Pacific Loon.—Common on the beach in November.

Mareca americana. Baldpate.—Possibly resident.

Querquedula discors. Blue-winged Teal.—Common. Possibly resident.

Anas boschas. Mallard.—Common.

Junco hyemalis thurberi. Thurber's Junco.—One large flock recorded in San Gabriel Valley. Rare in town.

Columba fasciata. Band-tailed Pigeon.—One record of four in a canyon.

Sayornis saya. Say's Phœbe.—Commonly found in fields all winter.

Astragalinus lawrencei. Lawrence's Goldfinch.—Rare.

Zonotrichia coronata. Golden-crowned Sparrow.

Oidemia perspicillata. Surf Scoter.—Abundant in the surf at Long Beach in April. Perhaps resident.

Zonotrichia leucophrys gambeli. Gambel's Sparrow.—Abundant.

Summer Residents.

Tyrannis verticalis. Arkansas Kingbird.—Common.

Tachycineta thalassina lepida. Northern Violet Green Swallow.

Icterus bullocki. Bullock's Oriole.—Common after the last of March. Nests largely in canyon trees.

Phainopepla nitens. Phainopepla.—Common in small flocks among pepper trees after the middle of March.

Petrochelidon lunifrons. Cliff Swallow.—Common, nesting inside of barns and under eaves.

Riparia riparia. Bank Swallow.—Abundant, nesting in high banks along the ocean at Long Beach.

Stelgidopteryx serripennis. Rough-winged Swallow.—Common, nesting in the banks at Long Beach.

Dendroica æstiva. Yellow Warbler.—Common.

Zamelodia melanocephala. Black-headed Grosbeak.

Chordeiles acutipennis texensis. Texas Nighthawk.—Common.

Cyanospiza amœna. Lazuli Bunting.—Common in Puente Hills.

Myiarchus cinerascens. Ash-throated Flycatcher.—Common.

Trochilus alexandri. Black-chinned Hummingbird.—Most common hummer in summer.

Icterus cucullatus nelsoni. Arizona Hooded Oriole.—A common town bird, nesting on the under side of palm leaves.

Wilsonia pusilla chryseola. Golden Pileolated Warbler.—Common among scrubby willows.

Empidonax difficilis. Western Flycatcher.—Recorded on May day.

Icteria virens longicadus. Long-tailed Chat.—Singing among willows on May first.

Empidonax traillii. Traill's Flycatcher.—Common in canyon trees.

Hylocichla ustulatus. Russet-backed Thrush.—One May record.

Transients.

Chen hyperborea. Lesser Snow Goose.—Migrating in February.

Hylocichla ustulatus audubeni. Audubon's Hermit Thrush.—Two records in the spring migration.

Ceryle alcyon. Belted Kingfisher.—One record on the beach.

Oxyechus vocifera. Killdeer.—A flock of fifteen recorded in November.

Ampelis cedrorum. Cedar Waxwing.—Two records: One flock of twenty in the live oaks on the first of January, and a flock of five in Whittier Park in March.

Selasphorus rufus. Rufus Hummingbird.—Common in the spring migrations after March 31.

Chætura vauxi. Vaux's Swift.—Commonly seen during April and May.

Piranga ludoviciana. Louisiana Tanager.—Two records in May.

A PURPLE MARTIN ROOST.

BY P. A. TAVERNER.

The Purple Martin is a strange bird and one that my experience points out as a slowly vanishing race. Outside of the late cases in the east where their local extinction was clearly due to the inclement weather, they seem to be on the downward path. Old established colonies are being reported deserted without, as far as I can discern, any adequate increase in other

quarters. A record of all the Martin communities in Michigan State with an estimate of the numbers reported every few years would be a valuable acquisition to our ornithological data.

The birds are, however, far from being extinct or even uncommon but very local in their distribution. They are never seen in the country except during the migrations or in established colonies about certain human habitations. Indeed they are peculiarly haunters of civilization and are about the business sections of our cities, where the flat gravel roofs and overhanging cornices are tenanted by these birds together with House Sparrows and Nighthawks. Toward the middle of August, however, the outlying colonies are deserted and the birds gather in large flocks preliminary to the southern migration. At these times they are generally to be found roosting at night in great numbers in the long grass and reeds of the swamps and marshes.

In 1903, the middle of August, I saw a large flock about the Field-Columbian Museum, Jackson Park, Chicago. The nearest marshes of any extent are some miles away from this point and our little circle of bird men were much interested in discovering where they passed the night. Every evening about five o'clock they gathered about the great dome of the museum perching in long rows, like beads on a thread, on the guy wires of the smokestack. One evening I counted one hundred on one wire. There were three other lines equally well filled, making four hundred birds. Besides, there were, I should judge, nearly half as many more flying around in their aerial acrobats; so an estimate of six hundred birds would not be far from their true numbers.

The spacing of the individuals upon the wires was exceedingly regular and even—about twelve inches on centers in each case—and I do not think the largest space between exceeded the smallest by more than two inches. This is a phenomenon that can also be noticed among Swallows when they perch upon the telegraph wires in numbers. The cause of it used to puzzle me a little until I watched these Martins on the guys of the museum stack. Being long-winged birds, they require a certain space in which to fold their wings on alighting and it is

this wing spread that governs their relative positions on a line or perch like a wire where they have to sit side by side in the same plane.

The air as well as the wires was filled with their wheeling forms, and the soft chattering of their numbers formed a continuous soft monotone very pleasing and quieting to the senses and conducive to musing and meditation. Indiviluals were continually forsaking their perches and hurling themselves into the giddy evolutions of their comrades on the wing and their places were shortly taken by others that had been but waiting for a vacancy. Starting from the highest point of the wire one of the rest-seekers would gradually flutter down its length emitting half-angry warnings, answered in a like manner from the seated ones, until a space was found that had been deserted by its occupant when the new comer would settle down just about a foot from the neighbor on either hand; perhaps I should say wing.

Thus it continued each evening. As evening advanced the birds became more restless and uneasy and the occupants of the wires kept continually changing until just about sundown, when up they all flew, circled a few times overhead and then away to the westward—straight up the Midway and so vanished in the distance. They were followed a couple of evenings on a bicycle but that they soon left far behind and we were as ignorant as ever of their destination. At last, on August 21st, Mr. J. L. De Vine ran them down. Stationed at the far end of the Midway, he watched for their coming. True to their usual hour they came straight up the broad Midway. Flying swiftly they passed directly over the observer's head and dashed into the trees in the corner of Washington Park just across Cottage Grove Ave., joining others of their kind already there; and the problem was solved. The next evening found the three of us, Mr. De Vine, Professor Ned. Dearburn and the writer there waiting. The spot chosen for the night roost was peculiar and worth a passing mention. In all Chicago I know of no spot that would seem more unlikely to be used for such a purpose. Cottage Grove Ave, runs north and south, bounding Washington Park on the east. It is bi-sected by 60th street, and in the

angle thus formed, lies the southeastern corner of the park. On the avenue is a double line of noisy, clanging, banging cable cars, running a three-minute service. Diagonally across there were a number of pop-corn stands, gypsy fortune tellers with their array of gasoline jacks and the usual quota of loafers.

Automobiles, delivery wagons, trucks, and all manner of vehicles are continually passing, and the street is generally well filled evenings, with a throng of saunterers, sightseers and loafers. Directly across 60th street is San Soucci, a large beer garden, redolent of vaudeville sights and sounds. Arc lights sputter and sizzle, gasoline jacks flare and wave, and above all the sounds of the street and crowd rise the noises of the brass band and the roar of the "shoot the shoots," continuing from seven o'clock in the evening until nearly twelve at night. Yet right there midst all this noise and confusion was where these strange and unaccountable birds had chosen to take their night's rest, unmindful of the acres and acres of quite lofty shade that stretched away to the north and west in the quietness of the great park.

When we arrived there were already quite a number of Martins flying about and dotting the telegraph wires in the immediate vicinity. Soon a flock was seen coming in from the north, then one from the west, until shortly, to whatever point of the compass we turned, we saw numbers of them hastening to the rendezvous. As they gathered, and as it grew later, they forsook the telegraph wires and circled round and round the small clump of trees in the very corner of the park, almost overhanging the noisy avenue and looking directly into the blare and glare of the garden. The museum delegation came at their appointed time, and their numbers were lost in the great flock that wheeled about this spot. By degrees, bunch after bunch settled down in descending spirals and sought places in the small, three corner trees, until most of the flock had vanished therein.

It was getting dark now, when, with a flutter of wings and a deafening clatter from a multitude of tiny throats, they all rose again into the air in an agitated, boiling mass, and coincidently, the half-drowned screams of a couple of Blue Jays were

heard coming from the deserted foliage. As they rose and joined those few that were still in the air, they fairly darkened the sky. Their numbers could not be estimated. There may have been one thousand, there may have been twenty. They formed a solid ring, I should judge, two hundred feet in diameter, a short way above the topmost branches, and whirled round and round in a dizzy circle. To look at them made the eyes ache and the head reel.

Again and again they attempted to re-settle in the branches of the trees, only to burst up again as the protesting noise of the Jays was heard. They broke away from the attractive spot now and again, and made a wide detour of the park, only to return and resume their mazy, wheeling flight. By and by the Jays were heard in another quarter, and by degrees the Martins all settled in the desired trees. The three little trees spoken of before seemed to be the coveted positions, but were soon filled to overflowing. A bunch would dash into the covering, and, failing to find foot-room among the densely packed branches, would, in their efforts, knock dozens off their perches, and a mass of fluttering, scolding birds would burst out again. Some would regain their lost perches, and the remaining unsuccessful ones would be forced to seek places in the trees adjoining. In no case did any birds alight in these neighboring trees of second choice until the futility of finding places in the desired three corner ones was proved by actual experience.

Slowly darkness settled down and slowly all were accommodated in the lofty cover and the noise of the combined twitterings grew less and less insistant until quietness covered all, except when a belated delegation from some probably distant part of the city dashed into the crowded branches and raised a momentary uproar once more. These outbreaks grew less and less frequent until, by the time the noises of the street and San Soucci were at their height, the Martins were silent.

Then, approaching the little patch of bush, we looked up through the dark branches against the sky, illuminated by the thousands of electric lights of the city. Every branchlet and twig had its burden of little fluffy feather balls, each with its

head tucked between the joint of its ample wings, and covered with the spread of shining scapular feathers.

A policeman on night duty in the park was the only one in the crowd that seemed at all aware of the interesting occurrence that happened nightly at this spot. He told us the birds remained quiet until about four o'clock in the morning, when the noisy clattering recommenced in full force, continued for half an hour or so, and then the assembled host gradually broke up, each division departing separately and spreading out over the city, sought their day time haunts. It would have been interesting to learn how many more such roosts there were in and about the city, and to know how large an area was nightly drained of its Martins to supply each roost; but this was too great a task for a few observers to do in one season. A week or so more and all the Martins had left for the winter. I left this city the following spring and so did not see this sight again.

However, I hear from Mr. De Vine, that the same scene saw the recurrence of the roost the next summer of 1904 and again in the same season of 1905. Without doubt, unless some radical change has taken place in the locality or status of the species, as I pen these lines, the Martins are once again in possession of the three little trees in the southeast corner of Washington Park, and are daily re-enacting what I have attempted herein to describe.

A GLIMPSE OF THE BIRDS OF SECOND LAKE, COOS COUNTY, NEW HAMPSHIRE.

BY CHARLES H. ROGERS.

Coös is the most northern county of New Hampshire and occupies most of that state north of the White Mountains. Pittsburg township, in its turn, covers the northern end of Coös county, an end twenty-four miles long. The Connecticut lakes are nominally four. Fourth Lake, a tiny pond and the source of the Connecticut River, lies in northernmost Pittsburg township next door to Canada. The infant river flows thence to Third Lake a little below, next six miles through the forest

to Second Lake, and then eight miles to First Lake, the biggest of all. South to First Lake all the land is forest, part of it virgin.

At Fourth Lake there are no buildings; at First Lake a number. I had nothing to do with either. I arrived at Second Lake August 28th, 1905, and stayed at Idlewild Camp at about the middle of the west shore.

My first hunt was to paddle along the north-west shore and go up the river a short distance. I found what the rest of my two-weeks' stay confirmed, that the characteristic of the forest bird life at that season was large flocks of small birds. A characteristic flock would consist of Chickadees (the first in numbers as in gaiety) with a lesser number of their Hudsonian brothers (easily distinguished at a glance or as far as they could be heard), several Red-bellied Nuthatches (hardly second to the Chickadees in volubility), several species of warblers (the commonest was the Myrtle, with the Black-throated Green second), a few Golden-crowned Kinglets, some Juncos (most abundant of the Fringillidæ) and White-throated Sparrows in the brush, and perhaps a Red-eyed Vireo or two, a Flycatcher and one or two other species. This afternoon the Flycatcher was an Olive-sided and one of the "other species" was my first Philadelphia Vireo, most obligingly low down in the alders along the river. I saw four other individuals of this species during my stay and all were in alders.

It seemed strange to find a gull in this "world of green hills," but I saw one of some small species flying over the lake, August 30th.

I did not see an owl of any kind. The only one I heard, a Great Horned, began hooting back of camp about five o'clock one sunny afternoon: "Hoo hoo-hoo hooo hoo." He varied this remark only by occasionally slurring and once or twice dropping the last syllable.

On September 2d I took the trip to Third Lake and back with a fellow camper. Nothing unusual appeared till we were nearly there, when a search for a woodpecker hammering overhead brought to light one with a white-barred back,—my first of the American Three-toed species. The lake proved to

be a mile-long gem set in forest clad hills rising directly from the water. We ate lunch at a just vacated camp alive with Juncos, Myrtle Warblers, White-throated Sparrows, etc., clearing away the crumbs. A Hairy Woodpecker and a couple of Canada Jays also made themselves at home in camp. While out paddling after lunch a Great Blue Heron flying over the woods north of the lake got himself put down as my farthest north bird, and a Winter Wren at the water's edge loudly asserted his claim to second place. The return trip to Second Lake yielded another Three-toe of the same species, which came quite close in answer to my "squeaking."

Ten days passed without my seeing a single Canadian Spruce Grouse, a species which I had particularly hoped this locality would add to my life-list, so on September 8th I made a special hunt for it along what I was told was the best trail for it, one running east from the opposite shore. I followed it as long as I had time without seeing any grouse but the usual Canadian Ruffed, which that morning I heard drumming for the first time. I started back through the woods a little to one side of the trail and almost immediately flushed three of my longed-for Spruce "Pa'tridges." Instead of thundering off through the woods as Bonasa does they flew to low branches and looked at me. I got within six feet of one, and then she merely flew to the ground a few paces off. Though they were all hens or young birds I felt repaid for my hunt, but before I regained the trail I put up a fourth bird, a cock, a very handsome little fellow with his inky breast and bit of scarlet skin over his eye.

In such a country I had expected to find plenty of Crossbills of both species, but on the afternoon of the day when I saw Canachites a male which visited a tree outside of my window at camp was the first I saw. Alas, his wings were plain and I have yet to see a White-wing. The next day he came with his mate and both flew to the ground near the kitchen after scraps. The next afternoon I left and was once more in the land of the English Sparrow.

AUGUST DAYS WITH THE BIRDS.

BY LYNDS JONES.

Because the ten-day camp was primarily a family plan carried into execution from the 14th to the 24th inclusive, should not create prejudice against the work with the birds. A family camp entails more labor and attention in the stages preparatory to being comfortable than a purely stag bird camp, to be sure, but it takes the birds some little time to adjust themselves to the intrusion. Besides, camp preparation should never be allowed to wholly eclipse the birds.

A camp site on a grassy bench just below the level of the high plain of the country, and some sixty feet above the river, called Vermillion because its flood waters are stained red by the disintegrating red Bedford shale, with a clear spring, a spreading oak, and the river valley bending to right and left, and little else may be wished for—except fair weather.

Meadows, wheat stubble, hay land, corn fields, gardens, orchards, fence tangles, pastures, on the uplands; berry, grape, burning bush tangles, brush thickets, well grown trees, on the steep slopes of the river valley; shale cliffs, willow islands, and across the river a deep and extensive woods with here and there thickets of white cedar and white pine, constitute a well diversified environment. Swamps and extensive water surface are not found anywhere in the region.

Midsummer temperatures prevailed. The mercury stood about 70° during the night, and frequently reached 84° during the day, once mounting to 86°. Breezes were light to brisk, always from the southwest, except during the numerous thunder squalls, when they became high and blew from every direction except east. The sky averaged fair. There were no dark days.

Mosquitoes, gnats, and horse flies there were, but in endurable numbers. Of the hosts of common flies no account need be taken. Ants figured only in the vicinity of the sugar can.

While the tent was being pitched a Turkey Vulture called to inquire about our garbage, but departed red-headed when he

learned that there was to be none. Later I saw him, with five of his fellows, impatiently wheeling over a woods pasture.

A Cooper Hawk was chased into our trees by ten Crows, and held there for half an hour despite his efforts to evade them. We brought no gun. Afterward I saw him worrying a Red-tailed Hawk several planes above the Crows.

Field Sparrows and Wood Pewees sang all day and every day, but the Red-eyed Vireo seldom sang except during the early morning and evening hours. When heard at all at midday he was fretful and scolding. A young Baltimore Oriole in full song visited us regularly about noon, and again about four in the afternoon. Once a Scarlet Tanager sang at midday. From nine in the morning until three in the afternoon there was so little bird life evident that the casual observer would pronounce birds almost absent.

As evening approached many of the birds sang in nearly full voice. Towhees mounted the tree-tops in the river valley; Cardinals whistled from thickets or responded to call and paid a visit to the camp environs; Indigo Buntings adorned the leafless tops of trees everywhere; Carolina Wren echoed from the distance, then startled us by bursting forth in the bush by the hammock; Mourning Doves crooned from the dead elm just around the bend. Catbirds, Goldfinches, Kingbirds, Baltimore Orioles, Robins, Chickadees, and Flickers sang lustily. Barn and Rough-winged Swallows and Chimney Swifts swung back and forth through the gorge at our feet, and Great Blue and Green Herons and Belted Kingfishers flashed in and out over the river on their way up and down.

As silence fell with the gathering shadows, the distant quaver of the Screech Owl grew more and more distinct, answering back and forth from grove to bank, until the approaching bird stood just above the tent pole. A low answering quaver from inside the tent brought him to the canvas for the second before the strangeness reached his brain—that was enough. No other owls were heard during the ten days and nights.

The species represented by the greatest number of individuals was clearly the Bobolink, every bird in the fall dress. There was not a minute during the day when either many of the birds

were seen or the tinkling of their calls was heard from the fields or from the air as they flew over the valley from field to field. It has never been my lot to see as numerous a host of these birds. They associated with Vesper and English Sparrows, and with Cowbirds, and were more numerous than all of them together. Some of the young were molting, but all of the adults had completed the molt before the beginning of my observations at the camp.

Sallies into the woods and fields from the camp brought to light forty-seven species for the ten days, of which twenty-seven might be said to be singing birds, and of this number fifteen were in full voice, at some time during the day. It should be remarked, however, that the singing individuals seemed to form a small minority of the individuals of the species, except in the case of the Goldfinches, Carolina Wrens and Cardinals.

I was unable to find a single migrating bird. This was somewhat of a disappointment, since migrating individuals of certain species had been reported from Detroit before the 10th of the month. If southward migrations occur in this part of the state they must be represented by very few individuals or there would be some records made. Possibly we are so far out of the line of southward movement that it is only at flood tide that the migrants reach us.

To the doubting Thomases I am glad to be able to say that bird study in August is both pleasant and feasible. The terrors of heat and insect are more in the imagination than reality. I say this not after a single experience, but after a trial of several years in regions which insects infest in numbers, and under conditions of high temperatures. The profit in the study is great.

TWO DAYS WITH THE BEACH BIRDS AND BOTANISTS.

BY CHRESWELL HUNT.

When asked to accompany the Philadelphia Botanical Club on a field trip to Stone Harbor, N. J., on September 3d and 4th, I gladly accepted the invitation. To be sure it was not an or-

nithological expedition, but the bird student should know at least a little botany and entomology, each overlapping the other. We find a bird's nest in some bush and right away we ask, "What kind of a bush is this?" We catch a bird dining upon some insect and again we want to know what species of insect it is. I recently heard a bird student remark that he did not know a chestnut tree from an oak. How much pleasure he must miss when afield! The trees are the best of companions when one is on speaking terms with them and especially are they the friends of the bird student: for are they not the very homes of the birds?

And what bird-lover is there but knows how the wild flowers fill in the little gaps in a day spent afield? Especially is this true during the long summer noons when bird-life is so quiet—all save the warble of the Red-eyed Vireo and the occasional long-drawn note from a Wood Pewee. All the birds seem to be taking a mid-day nap. Perhaps we have been on the bird quest since early morning and now we begin to realize how hot the day is. The vireo's warble grows monotonous and we think of turning homeward. But instead let us turn to the wild flowers and who knows but that while stooping to examine some plant we may unexpectedly flush a bird from her nest? How many an ornithological treasure would have remained hidden had not some flower's bright color lured me thither!

The New Jersey coast is cut up by inlets and sounds. These sounds are separated from the ocean by stretches of salt marsh and sandy beaches. Stone Hollow is situated at the southern end of what is known as Seven Mile Beach in Cape May County. It is the terminus of a little branch railroad which runs south from Sea Isle City and, as one of the Botanists expressed it, "is the only place yet wild." Here we have the natural beach (unbroken by unsightly board walks) with the sand dunes stretching away behind it, and behind them the salt marshes.

September 2d was a rainy day and when we arrived at Stone Harbor we found there were only four in the party. We went to sleep that night with a southeast gale blowing in from the ocean and the waves thundering along the beach. The following morning the wind continued southeast with a cloudy sky

and occasional showers. We explored the salt marsh and the sand dunes. Birds were not very plentiful. Although there should have been and possibly were Seaside and Sharp-tailed Sparrows in the marshes, where they breed, I failed to find any.

Song Sparrows were not uncommon among the sand dunes and thickets of Bay bushes. The marshes were studded all over with the handsome flowers of the Seaside Pink and stately Mallows waved among the grasses. It did one good to watch the enthusiastic botanist who would wade knee-deep into the treacherous "salt holes" to procure some coveted specimen.

An Osprey was almost always in sight either headed out to sea or returning with a fish in his talons.

We came upon an open space—a sort of amphitheater as it were—surrounded by sand dunes upon which waved the clumps of grass. In this open space were congregated thousands of Tree Swallows, some flitting about, others resting upon the sand. When we reached the spot we found that the sand was dotted all over with their excrement, which seemed to be entirely composed of the seeds of the Bay berries. These birds had undoubtedly roosted here upon the sand all night where they were protected from the strong southeast wind. Later we saw the swallows in the bay bushes feeding upon the berries. These berries are covered with a thick coating of wax and this wax coating seems to be the only digestible portion, as the excreta showed the rest of the berry entire.

The mosquitoes at last became unbearable and we retreated to the beach. One of the greatest tests of patience I ever witnessed was to try to place a specimen nicely in the plant press while a myriad of these attentive insects settled upon one's face and neck. To say the least it was not calculated to economize one's vocabulary.

There were quite a number of gulls along the beach, all that I could identify with certainty being Herring Gulls.

Barn Swallows flew to and fro, barely skimming the sand and apparently having to hustle for what food they secured. I wondered why they did not cross the dunes to the marshes where the mosquitoes were so plentiful, but perhaps a mosquito diet was not desirable. Small flocks of Sanderlings and

Piping Plovers ran along the beach at the water's edge probing into the sand with their bills. It was amusing to watch them. They would run out after the receding surf only to rush back again at the incoming wave's approach and barely escaping it. Occasionally they would be overtaken and then they would reluctantly take wing to drop again behind the receding surf.

WANTED.

In attempting to determine the forms of certain of our birds which represent the species in northern Ohio, I find myself greatly hampered by the lack of specimens from neighboring localities. I desire to examine specimens of the Empidonax traillii or alnorum forms which have been collected in western Pennsylvania, Ohio, Michigan, Indiana, Illinois, Iowa, Wisconsin, Missouri, and Kentucky. If readers of this notice have such specimens (skins) which they are willing to loan for a few days I will gladly pay transportation both ways and guarantee safe return. I also wish skins of Telmatodytes from the same regions. The range of these forms has not yet been accurately determined. Any aid in establishing their range will be greatly appreciated.

Readers are also advised to scrutinize carefully their specimens of Agelaius phœniceus and A. p. fortis. There seems to be some confusion about these two forms which may be eliminated by careful study.

Address information or specimens to Lynds Jones, Oberlin, Ohio.

THE WILSON BULLETIN.

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Edited by LYNDS JONES.

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EDITORIAL.

The southward migrations are in full progress. Don't slight them.

How would it do to sit down and compile your notes on the Broad-winged Hawk and send them to Frank L. Burns at once? He would greatly appreciate your help. Not a member of the Club has done anything for him yet!

You have filled out some of the life history blanks which were mailed with the last Bulletin. Don't wait to fill every space of every blank, but send at once to Mr. Burns before you lose them. They are valuable.

Don't fail to plan a strenuous winter campaign with the birds. This early caution is made because the editor will have no other opportunity to remind you of the winter study before the winter has begun. The early weeks of the winter are the important weeks. Try to determine what influence the approach of cold has upon each species. Also what effect snow has.

The editor is making a card catalogue of faunal lists if birds. from lists comprising the whole of North America down through regions covering parts of the country, states, counties, and even parts of counties, such as Christmas and New Years and May Day censo-horizons. His object is to have ready to hand a reference list

to which he may turn to quickly determine whether any given region is covered by a faunal list. If any one knows of such published lists in obscure papers or magazines the editor would greatly appreciate a note to that effect.

The editor spent a delightful week, terminating on the last day of August, at Shawnee-on-Delaware, where Mr. C. C. Worthington has established a Bird Farm under the direction of Prof. W. E. D. Scott. The place is unrivaled for the study of birds and of forestry. We are pained to have to announce that the ill health of Prof. Scott has made it necessary for him to retire to northern New York for a season.

In the last Bulletin a plea was made for summer studies of the birds. The Bulletin for December will be largely devoted to reports of the summer work if you who read this will see that the material you have secured reaches the editor before the middle of November. Remember that summer studies are few and that there is room for a great deal that is interesting and valuable. A single note upon a single species is not too small and insignificant for permanent record. Do not fail to send in what you have.

THE ANNUAL ELECTION OF OFFICERS.

It is important that every member should make nominations for the entire list of officers who will serve us for the year 1907. A full list of members was published in the March number. Any active member upon that list may be nominated for any office. Such nominations should reach either the president, Lynds Jones, Oberlin, Ohio, or the secretary, Frank L. Burns, Berwyn, Pa., not later than the fifteenth of October.

ELECTION OF MEMBERS.

The following persons are presented for Active membership in the Club. Objections to the election of these persons as members should be sent to the Secretary. In the absence of obections this announcement stands for their election.

Edward E. Armstrong, 5468 Washington Ave., Chicago, Ill.

J. L. Sloanaker, Newton, Iowa.

NOTES.

The following extracts from my diary may prove of interest in regard to the habits of the Tree Swallows:

Kingston, March 24, 1902.

Today the Pierrepont made her first trip, breaking through the ice between Kingston and Nine Mile Point with the greatest of ease. It is an unusually early opening as the ice rarely breaks up before the 9th of April, and I have seen it in the harbor as late as April 26th.

The first trip of the Pierrepont is always one of the events of the season and that must be my excuse for recording it. We have so few really great things happen that it seems a pity to miss any of them. If this fine weather holds on, and a south wind develops, we may look for Tree Swallows, early and all as it is, because there must be food for them, and the first sailings of the Pierrepont and the arrivals of the Swallows generally occur about the same date. For a few years, the name Tree Swallow seemed almost a misnomer. If we cannot say much in favor of the English Sparrow, we may at least give him the credit of causing both the Swallows and the Blue-birds to return to their original nesting places. It is now possible to find Tree Swallows nesting in hollow trees instead of bird boxes, although they seem to dearly love a hollow fence post, or a convenient cavity in a telegraph pole. I have even found this swallow breeding in a hollow in a bank, and in my collection there is a beautiful set of seven eggs taken from suuch a location on an island in the St. Lawrence, near Brockville. The site of the nest was quite as remarkable as the number of eggs found. In the apple trees in the very old orchard at New Court, the Tree Swallows breed pretty regularly.

March 28th, 1902.

After all there is some satisfaction in being able to say, "I told you so." That is my position in the present instance, and who can blame me if I swell with pride when turning back to the swallow notes made on the 24th. Everything happened just as expected; there was food for the birds, the wind veered to the south and the Swallows came here in numbers to-day. It is one of the earliest arrivals I have ever known.

April 15th, 1902.

Yesterday a fine south wind blew and swallows came up with it in large numbers. They were very tired and little inclined to fly, but sat about on the telegraph wires. Those reported earlier did not remain, the cool weather, no doubt, forcing a retreat.

Last year the swallows came long before the usual date, and as this spring was even earlier it seemed as if they should have beaten the record, but I could not place them until to-day—a time they should not have appeared, if my theories are correct. The

wind was in the north, a mild relapse into winter was being experienced and yet four Tree Swallows were flitting over the Bath Road Creek—two more were seen further on. I strongly suspect they have been here for several days and are hoping for better things in the way of weather.

April 23rd, 1903.

The weather has been very cold and discouraging to bird life in general, the wind ordinarily in the north and frost nearly every night; frost severe enough to make a quarter of an inch of ice on the pools. In spite of it all Shrikes, Robins, and Horned Larks have built their nests and laid their eggs, and on Tuesday I saw a Tree Swallow invading a post hole as if it had affairs of state on hand. The swallows must have had a hard time finding insect food, but as the Barn Swallows and Purple Martins have arrived, flies must exist in sufficient numbers to support them. On Tuesday some thousands of Tree Swallows were circling in a sheltered spot in the rear of the Institution. It was a most interesting sight, as the winged insects evidently flew within a circumscribed space, not more than eighty yards in length, and this kept an immense body of Swallows in close quarters. One solitary Barn Swallow gave quality and tone to the assemblage.

March 26th, 1904.

Although this is one if the latest seasons recorded, the Tree Swallows are here in numbers. On March 24 I thought I saw one, but it seemed too good to be true; to-day they are everywhere and, as usual, on their arrival, tired out.

The foregoing notes would lead one to suspect that the Tree Swallows frequently arrived at a very early date. A few years ago I kept in touch with several observers of the early arrival of Swallows in the western part of Ontario, and it seemed about an invariable rule that they reached there a day ahead of their coming here. The average date was about April 8th, but of late years they seem to be putting in an appearance earlier.

C. W. CLARKE.

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WITH THE BIRDS IN NORTHEASTERN COLORADO.

BY JUNIUS HENDERSON.

On June 7, 1906, the writer with three assistants started northeastward from Boulder, for a month's geological and biological expedition to the Chalk Bluffs and Pawnee Buttes region in northern Weld County, in the interests of the University of Colorado. It being the nesting season and the majority of the nests containing young birds, we did but little bird collecting, but contented ourselves, so far as our feathered neighbors were concerned, with photographing them and studying them in relation to their environment.

Our course lay at first along the edge of the plains bordering the foothills, then gradually swinging outward through the irrigated valleys to Greeley, then northward over the higher plains, above reach of irrigating ditches, to Chalk Bluffs eastward to Pawnee Buttes, back to Greeley by way of Crow Creek and home by the shortest route.

The great difference in conditions between the streams and timbered valleys of the foothill region and the dry, treeless plains of the northern area was noticeably marked by a change in the avian fauna. Among the pines of the foothill ridges were magpies, Long-crested Jays and Brewer Blackbirds, and on the rocks of the foothill slopes were innumerable Rock Wrens, scolding and singing as we passed by. On dry, open mesas adjoining the foothills between the streams Mourning

Doves and Meadowlarks were abundant, while Lark Buntings, a half dozen at a time, rose into the air and sang their breezy songs as they dropped back to the earth on a long slant, reminding one forcibly of the Bobolinks in moist meadows just east of Boulder—indeed, these Buntings are commonly called Bobolinks by people who are not observant. On these same mesas Lark Sparrows, Vesper Sparrows and Desert Horned Larks crouched on the ground, concealed by the blending of their colors with the dry mesa grasses, testing our ability to distinguish them from each other as they darted from almost beneath our feet, the tail being the chief distinguishing character in receding flight. Western Nighthawks, which at twilight pursued their zigzag courses in quest of insects, at noontide were flushed from among the pebbles of the mesas where they remained invisible until disclosed by sudden flight, and their eggs were difficult to see even when the bird left them within a few feet of us. In the artificial groves surrounding "ranches," as every out-of-town habitation is called in Colorado, were found Robins, Yellow Warblers, House Finches, English Sparrows and other birds which haunt the streets of the towns. Wherever there was swampy ground Red-winged Blackbirds congregated, with occasionally a few Yellow-heads. In the pastures Cowbirds followed the cattle as they were once wont to follow the bison in the same region. In woods and brushy patches which line the streams as they break from the mountains into the valley Bullock Orioles called through the treetops, Catbirds, Spurred Towhees and Green-tailed Towhees flitted through the shrubbery and the notes of the Long-tailed Chat and Western Yellow-throat frequently greeted our ears. By watching diligently we could sometimes obtain a tantalizing glimpse of the latter, and the Chat regaled us with weird and plaintive notes throughout the night when we camped near his nesting site. Further out in the irrigated valley, the larger trees along roadsides and ditch banks harbored Red-shafted and Yellow-shafted Flickers and Red-headed Woodpeckers. Lazuli Buntings sang to us from telephone wires, upon which balanced Barn and Cliff Swallows in regular rows so spaced as to barely permit a good spread of wing as they took flight. Crows, which have nearly

disappeared from the foothill region, were sometimes seen here. Around the shores of small lakes and irrigating reservoirs stalked Great Blue Herons, Black-crowned Night Herons, Avocets, Bitterns and Wilson Phalaropes, and among the cattails and other swamp vegetation Coots, etc., were found nesting. Killdeer were everywhere in evidence and Spotted Sandpipers were common, a nest of the latter being found at Loveland.

Beyond the abrupt line of irrigated fields, above reach of irrigating ditches, a decided change takes place as we break suddenly upon the open range. Here treeless plains, with tone, color and a fascination all their own, stretch away for miles. Green fields give way to brown, half-dried buffalo grass, cactus and other plants indicative of arid or semi-arid conditions. No perennial streams water or drain these plains. Between storms the stream beds are nearly as dry as the adjacent divides, except for occasional waterholes which retain a little water. A few trees along the channels mark their positions and courses to the plainsman. No words or pictures can convey to the reader a just idea of these plains. They must be seen to be comprehended.

The robins, warblers, waterbirds, shorebirds, flickers, woodpeckers, lazuli buntings, blackbirds, jays, magpies, wrens, finches, catbirds, orioles, towhees and English sparrows have disappeared, but the mesa birds of the irrigated section are still with us—the Vesper Sparrows, Lark Sparrows, Desert-Horned Larks, Lark Buntings and Meadowlarks. In entering upon the open range we at once encounter a bird unseen before, the Mountain Plover, which, despite its popular name, is a bird of the high plains rather than the mountains, though found in mountain parks up to an altitude of 9,000 feet. They were nearly all accompanied by young birds, and now for an unblushing confession. Behold the edifying spectacle of a solemn scientific expedition stopped for an hour on the plain, while four robust, sun-burned, grave and wise-looking fossil diggers fondled and played with a baby plover, photographed it and restored it to an anxious mother, who had watched the proceedings with dark forebodings at a distance of a rod or two. Color

protection, did you say? The young plovers simply disappeared the moment they stopped running.

Insistence upon the idea of color protection seems to have been overdone in some cases, and the subject may never be perfectly understood. In the woods and brush patches, where hiding is so easy and color contrasts so abundant, there are many apparent anomalies. For instance, why should the Green-tailed Towhee among the brush patches of the foothills wear a coat of such a color which so blends with the foliage as to render the bird nearly invisible while the Spurred Towhee in the same habitat is very conspicuous as it darts through the shrubbery? However, no matter what theories we may have or how we may disagree in our attempts to account for seeming anomalies found where cover is plenty, when we reach the open range we may at least agree on the great central fact that the birds and mammals of the plains are rendered inconspicuous and thus protected by their lack of conspicuous colors. We are here dealing with facts, not theories. An animal the size of an antelope, if it were black or white, would instantly attract the attention of every hunter, two-legged, four-legged or winged, whereas, in its proper dress it is overlooked in the majority of cases until it moves or spreads its flash disk, and even the flash disk helps it to disappear when it suddenly at a distance changes its course and "closes" the disk. The coyote and jackrabbit are safe if they keep their nerve and remain quiet. This is true of the plains animals generally, but the bison, which was in need of no such protection, was a conspicuous object—yes, was, for he is no longer conspicuous in the land which once knew him. Among the plains birds the Plover, Desert-Horned Lark, Vesper Sparrow and Lark Sparrow are exceedingly difficult to distinguish until one flushes them. In the sage brush near Slayton's Ranch, Brewer Sparrows blended so perfectly with the shrubbery that it required sharp vision to locate them even when they were singing as if to attract attention.

Among the Tertiary bluffs of northern Weld County another change of conditions takes place, accompanied by a change in the avifauna. Abrupt bluffs rise from the plains, dissected by gulches several hundred feet in depth, the rocky walls bearing

small pines and cedars, the gulch beds in many places covered with dwarf chokecherry trees, rose bushes and other shrubbery. Throughout the irrigated section we had seen numerous Kingbirds (*T. tyrannus*) and Say Phœbes, but these had been left behind. Throughout the bluff region there were great numbers of Arkansas Kingbirds, but not one of the other members of the family did we see there. Early the first morning in camp we were delighted to hear the Mockingbird which we had missed up to that time during the whole journey of 150 miles. They were abundant all along the bluffs and often gave us moonlight matinees in addition to the daylight concerts. White-rumped Shrikes were resting in the gullies. In this region, however, the birds of transcendent interest were the hawks and White-throated Swifts. On every inaccessible pinnacle or ledge of rock we were sure to see a nest of some species of hawk. On one occasion a member of the party was let down from the top of a cliff to a ledge, from which three young hawks were hoisted to the rocks above, photographed and then restored to their nest. Here we had our first and only experience with White-throated Swifts, which nest in holes in the rocks in such situations that we did not succeed in reaching them in a single instance, though we could at almost any time see them flitting to and fro. Clinging to the walls in many places were the mud habitations of Cliff Swallows, which, unlike the Swifts, nested within easy reach. Turkey Vultures, which were once abundant throughout the region traversed by us, were seen on this trip only on one or two occasions, a pair being constantly in sight of our camp at the Davis Ranch, ten miles east of Grover.

As we drove down Crow Creek, we noticed ahead numbers of Great Blue Herons passing each other, some headed southwestward, others northeastward. This is a familiar sight every summer among the big cottonwoods on the St. Vrain, Big Thompson and other streams where water is abundant, but was somewhat surprising miles from running water. Never did we expect to see a heronry in such a place, yet in a few moments the trees, in the dry channel of Crow Creek, came in sight, every tree bearing several heron nests, all containing young birds waiting the results of parental fishing excursions

to the Cache la Poudre River. The unusual situation of this heronry and the small size and gnarled appearance of the trees which supported the nests, made this the most interesting one we had ever visited.

THE BIRDS OF CLEVELAND, OHIO, AND VICINITY.

[The list of birds which follows has come into my hands without the name of the author attached, and without any internal evidence of who the author may be. I judge that it must be something more than ten years since the records upon which the list are based closed. The lack of an author's name and the lapse of time since it should have appeared in print may seem to make the printing of it at this time inadvisable or even questionable. However, the clear internal evidence that it has been prepared with considerable care and after a long period of study, and apparently after consultation with at least two other bird students of the same city whose high standing in bird studies is unquestioned, and because the region has never been fully covered in any published list, seem to me sufficient arguments for placing it on record now. If any reader can throw any light upon its authorship such information will be greatly appreciated.

The list which follows has been edited only to the extent of bringing the nomenclature up to date, and in the elimination of the Yellow Palm Warbler, which is given as rare, but without the record of specimens; the elimination of the "Black Scoter Duck, rare migrant. Noted one inside breakwater, October 16, 1886," because it is not possible to determine which of the two Ohio scoters is meant; and in the elimination of the "King Eider," given as a tolerably common migrant on Lake Erie, because such a record seems wholly improbable. A few verbal changes have been made, but none which in any way affect the list as I have it.

I cannot forbear a few comments upon this very interesting list in the light of some familiarity with a region only thirty miles to the west, which presents practically the same conditions, except the presence of a large river whose course lies

nearly due north and south, and whose headwaters mingle with the headwaters of the great Muskingum river. Such physical features argue a richer fauna during the migrations, in which there might well be expected a few rarities.

Evidence goes to show that however common the Pomarine Jaeger may have been previous to 1890, about the Cleveland harbor, it is not more than a casual visitor there now. An occasional specimen is still taken near Lorain, in Lorain county.

The numbers of both teals and Wood Duck have been greatly reduced since this list left the hands of its author.

It will be noted that the record for the American Egret is a new one.

The growing rarity of the King Rail is corroborative evidence that this bird is being rapidly crowded from its former haunts into the great marshes which still remain unexploited by steel works and ship yards.

The record of the Yellow Rail as a rare migrant is interesting.

The occurrence of the Purple Sandpiper, if given now, should be casual.

The Solitary Sandpiper must have avoided that vicinity, or else been confused with the Spotted Sandpiper, for it is common enough each spring in Lorain county.

Piping Plover was given in the list, but I took the liberty of assuming that the Semipalmated was meant, because our Piping Plovers do not have a complete black band around the breast. The statement that it is more common in fall than in spring accords with my experience with the Semipalmated and is at variance with my experience with the Piping.

It seems singular that the Red-shouldered Hawk was not found during the summer. The proximity of the city may well account for this. It is our common large hawk at Oberlin all the year.

In Lorain county the Saw-whet Owl is practically unknown during the last ten years. Occasionally one is heard.

At Oberlin the Horned Lark is a strictly winter bird. The Prairie Horned Lark breeds commonly, and many individuals remain all winter.

The note on Bobolink indicates that a favorite southward

migration route leads up the Cuyahoga river valley, thence over the divide to and down the Muskingum valley. There is no unusual accumulation of Bobolinks anywhere in Lorain county in the fall.

The remark that the Lark Sparrow is a tolerably common summer resident is out of accord with my experience in Lorain county, where it is rare, as it is in Geauga and Ashtabula counties. There may be unusually favorable conditions for its breeding near Cleveland.

The Yellow-throated Vireo is tolerably common all summer in Lorain county, but the White-eyed Vireo has never been taken there.

The record of the Prothonotary Warbler at Cleveland is probably the one given by Prof. A. W. Butler in "Birds of Indiana." It is unfortunate that the date is not given. There are three Lorain county records.

The Blue-winged Warbler breeds in considerable numbers all about Oberlin every summer.

The first Sycamore Warbler has yet to be found in Lorain county. The local conditions seem to be unfavorable.

This record of Kirtland's Warbler is the fifth for Cleveland. I am informed that two have been taken at Lakewood, a suburb, within the last five years. The conclusion that the Muskingum and Cuyahoga valleys are a migration highway for this warbler seems clear, rather than that these warblers follow eastward along the south shore of lake Erie from the west end, as argued by C. C. Adams.

The statements that the Kentucky and Hooded Warblers are tolerably common migrants, possibly breeding, indicate that Cleveland lies in their path of migration and their rarity at Oberlin indicates that they must reach that place by means of a lateral movement along the lake shore.

Wilson's Thrush breeds regularly at Oberlin, but it is far more common during the migrations.

LYNDS JONES.]

Colymbus auritus. Horned Grebe.—Common on Lake Erie in the migrations.

Podilymbus podiceps. Pied-billed Grebe.—Common on Lake Erie in the migrations. As yet I have not found it breeding.

Gavia imber. Loon.—Common on the lake in the migrations. It is continually getting caught in the fish nets.

Gavia lumme. Red-throated Loon.—Occasionally seen on the lake.

Stercorarius pomarinus. Pomarine Jaeger.—Common on the lake in the migrations. Sometimes remains all winter

Larus argentatus. Herring Gull.—Common migrant, occasional in winter.

Larus philadelphia. Bonaparte Gull.—Common migrant on the lake.

Sterna hirundo. Common Tern.—Common migrant on the lake.

Hydrochelidon nigra surinamensis. Black Tern.—Formerly common, now rare migrant on the lake.

Merganser americanus. American Merganser.—Tolerably common migrant on the lake. I feel sure that this duck breeds, since I have seen a male in July.

Lophodytes cucullatus. Hooded Merganser.—Common migrant.

Anas boschas. Mallard.—Common migrant.

Mareca americana. Baldpate.—Tolerably common migrant on the lake.

Nettion carolinensis. Green-winged Teal.—Common migrant.

Querquedula discors. Blue-winged Teal.—Tolerably common migrant on the lake.

Spatula clypeata. Shoveller.—Tolerably common migrant on the lake.

Dafila acuta. Pintail.—Tolerably common migrant on the lake.

Aix sponsa. Wood Duck.—Common migrant.

Aythya americana. Redhead.—Common migrant on the lake.

Aythya vallisneria. Canvas-back.—Tolerably common migrant on the lake.

Charitonetta albeola. Buffle-head.—Found everywhere in the migrations.

Harelda hyemalis. Old-squaw.—Common migrant on the lake.

Erismatura jamaicensis. Ruddy Duck.—Tolerably common migrant on the lake.

Branta canadensis. Canada Goose.—Common migrant.

Olor columbianus. Whistling Swan.—Frequently seen and shot on the lake during the migrations.

Tantalus loculator. Wood Ibis.—One captured on Rocky River, west of Cleveland, by Mr. H. E. Chubb. (See Jones, The Birds of Ohio, 1903, p. 51.)

Botaurus lentiginosus. American Bittern.—Tolerably common migrant and summer resident.

Ardetta exilis. Least Bittern.—Tolerably common in the migrations, and may breed.

Ardea herodias. Great Blue Heron.—Common summer resident.

Herodias egretta. American Egret.—In August, 1889, one specimen was found under the electric light mast on Water Street.

Butorides virescens. Green Heron.—Common summer resident.

Nycticorax nycticorax nævius. Black-crowned Night Heron.—Tolerably common summer resident, breeding in suitable localities.

Rallus elegans. King Rail.—Now rare, formerly more common.

Rallus virginianus. Virginia Rail.—Tolerably common summer resident.

Porzana carolina. Sora.—Common migrant, tolerably common in summer.

Porzana noveboracensis. Yellow Rail.—A rare migrant.

Gallinula galeata. Florida Gallinule.—I secured one under the electric light in the Public Square, October 4, 1885.

Fulica americana. American Coot.—Common summer resident and migrant.

Philohela minor. American Woodcock.—Tolerably common summer resident, less common than formerly.

Gallinago delicata. Wilson Snipe.—An irregularly common migrant.

Arquatella maritima. Purple Sandpiper.—Reported as rare by Mr. W. W. Woodruff.

Actodromas maculata. Pectoral Sandpiper.—Tolerably common migrant. I have found them under the electric light masts and on the breakwater.

Actodromas minutilla. Least Sandpiper.—Common on the breakwater in the migrations, less common in spring.

Pelidna alpina pacifica. Red-backed Sandpiper.—Common on the breakwater during migrations, less numerous in the spring.

Ereunetes pusillus. Semipalmated Sandpiper.—Common on the breakwater during migrations, less numerous in the spring.

Calidris arenaria. Sanderling.—Common on the breakwater during the migrations, less numerous in the spring.

Limosa fedoa. Marbled Godwit.—Rare migrant. I shot two in the spring of 1892.

Totanus melanoleucus. Greater Yellow-legs.—Tolerably common migrant.

Totanus flavipes. Yellow-legs.—Tolerably common migrant.

Helodromas solitarius. Solitary Sandpiper.—Rare migrant.

Actitis macularia. Spotted Sandpiper.—Common summer resident.

Numenius longirostris. Long-billed Curlew.—September 15, 1885, I noted one individual of this species on the breakwater.

Charadrius dominicus. American Golden Plover.—Reported as a rare migrant by Mr. W. W. Woodruff.

Oxyechus vociferus. Killdeer.—Common summer resident.

Ægialitis semipalmata. Semipalmated Plover.—More common in fall than in spring as a migrant.

Arenaria interpres. Turnstone.—More common in the fall than in the spring as a migrant.

Colinus virginianus. Bob-white.—Tolerably common resident, but less common than formerly.

Bonasa umbellus. Ruffled Grouse.—Tolerably common resident.

Ectopistes migratorius. Passenger Pigeon.—Once a common summer resident.

Zenaidura macroura. Mourning Dove.—Tolerably common resident.

Accipiter velox. Sharp-shinned Hawk.—Tolerably common migrant and summer resident.

Accipiter cooperi. Cooper Hawk.—Rare summer resident.

Buteo borealis. Red-tailed Hawk.—Common summer resident.

Buteo lineatus. Red-shouldered Hawk.—Tolerably common migrant. (?)

Buteo platypterus. Broad-winged Hawk.—Tolerably common migrant and summer resident.

Archibuteo lagopus sancti-johannis. American Rough-legged Hawk.—Rare as a migrant.

Haliæetus leucocephalus. Bald Eagle.—Tolerably common in the migrations. They probably breed at Rocky River.

Falco peregrinus anatum. Duck Hawk.—Rare migrant.

Falco sparverius. American Sparrow Hawk.—Common summer resident.

Strix pratincola. American Barn Owl.—Rare.

Asio wilsonianus. American Long-eared Owl.—Tolerably common resident.

Asio accipitrinus. Short-eared Owl.—Common except in summer.

Syrnium varium. Barred Owl.—Tolerably common resident.

Nyctala acadica. Saw-whet Owl.—Common in late fall and winter.

Megascops asio. Screech Owl.—Common resident.

Bubo virginianus. Great Horned Owl.—Common resident.

Nyctea nyctea. Snowy Owl.—Usually a rare winter visitor, but it may become fairly common after severe northern storms.

Coccyzus americanus. Yellow-billed Cuckoo.—Common summer resident.

Coccyzus erythrophthaimus. Black-billed Cuckoo.—Common summer resident.

Ceryle alcyon. Belted Kingfisher.—Common summer resident.

Dryobates villosus. Hairy Woodpecker.—Tolerably common resident.

Dryobates pubescens medianus. Downy Woodpecker.—Common resident.

Sphyrapicus varius. Yellow-bellied Sapsucker.—Tolerably common migrant.

Melanerpes erythrocephalus. Red-headed Woodpecker.—Common summer resident.

Colapates auratus luteus. Northern Flicker.—Common summer resident.

Antrostomus vociferus. Whip-poor-will.—Tolerably common summer resident.

Chordeiles virginianus. Nighthawk.—Over our city on summer evenings they are as numerous as the Purple Martins formerly were.

Chætura pelagica. Chimney Swift.—Common summer resident.

Trochilus colubris.—Ruby-throated Hummingbird.—Common summer resident.

Tyrannus tyrannus. Kingbird.—Common summer resident.

Sayornis phœbe. Phœbe.—Common summer resident.

Myiarchus crinitus. Crested Flycatcher.—Tolerably common summer resident.

Contopus virens. Wood Pewee.—Common summer resident.

Empidonax virescens. Green-crested Flycatcher.—Common summer resident.

Otocoris alpestris. Horned Lark.—Common migrant.

Cyanocitta cristata. Blue Jay.—Common resident.

Corvus brachyrhyuchos. American Crow.—Common in summer, sometimes resident.

Dolichonyx oryzivorus. Bobolink.—Tolerably common summer resident, abundant during the fall migrations.

Molothrus ater. Cowbird.—Common summer resident.

Agelaius phœniceus. Red-winged Blackbird.—Common summer resident.

Sturnella magna. Meadowlark.—Common summer resident.

Icterus spurius Orchard Oriole.—Common summer resident.

Icterus galbula. Baltimore Oriole.—Common summer resident.

Euphagus carolinus.—Rusty Blackbird.—Common migrant.

Quiscalus quiscula æneus. Bronzed Grackle.—Common summer resident.

Hesperiphona vespertina. Evening Grosbeak.—Rare in winter.

Carpodacus purpureus. Purple Finch.—Sometimes common in winter.

Acanthis linaria. Redpoll.—Rare in winter.

Astragalinus tristis. American Goldfinch.—Common resident.

Passerina nivalis. Snowflake.—Tolerably common in winter.

Pocœcetes gramineus. Vesper Sparrow.—Common Summer resident.

Passerculus sandwichensis savanna. Savanna Sparrow.—Tolerably common migrant. I have secured a great many under the electric lights.

Conturniculus savannarum passerinus. Grasshopper Sparrow.—Tolerably common summer resident.

Chondestes grammacus. Lark Sparrow.—Tolerably common summer resident.

Zonotrichia leucophrys. White-crowned Sparrow.—Tolerably common migrant. I have secured a great many under the electric lights.

Zonotrichia albicollis. White-throated Sparrow.—Common migrant.

Spizella monticola. Tree Sparrow.—Common during the winter.

Spizella socialis. Chipping Sparrow.—Common summer resident.

Spizella pusilla. Field Sparrow.—Common summer resident.

Junco hyemalis. Slate-colored Junco.—Common in winter and during the migrations.

Melospiza cinerea melodia. Song Sparrow.—Common resident.

Passerella iliaca. Fox Sparrow.—Tolerably common migrant.

Pipilo erythrophthalmus. Towhee.—Common summer resident.

Cardinalis cardinalis. Cardinal.—Most common during the winter.

Zamelcdia ludoviciana. Rose-breasted Grosbeak.—Common summer resident.

Cyanospiza cyanea. Indigo Bunting.—Common summer resident.

Piranga erythromelas. Scarlet Tanager.—Common summer resident.

Progne subis. Purple Martin.—Tolerably common summer resident. Formerly very common in the city, but the Englisn Sparrow has driven him off.

Hirundo erythrogastra. Barn Swallow.—Common summer resident.

Riparia riparia. Bank Swallow.—Common summer resident.

Stelgidopteryx serripennis. Rough-winged Swallow.—Tolerably common summer resident.

Ampelis cedrorum. Cedar Waxwing.—Common resident. In severe winters it disappears for a short time.

Lanius ludovicianus migrans. Migrant Shrike.—Common summer resident.

Vireo olivaceus. Red-eyed Vireo.—Common summer resident.

Vireo philadelphicus. Philadelphia Vireo.—Tolerably common migrant.

Vireo gilvus. Warbling Vireo.—Tolerably common summer resident. I have secured specimens under the electric light masts.

Vireo flavifrons. Yellow-throated Vireo.—Tolerably common migrant. I have found specimens under the electric light masts.

Vireo noveboracensis.. White-eyed Vireo.—Reported as a tolerably common summer resident by Mr. W. W. Woodruff.

Mniotilta varia. Black and White Warbler.—Common migrant, tolerably common summer resident.

Protonotaria citrea. Prothonotary Warbler.—A specimen flew into Mr. H. E. Chubb's establishment of this city.

Helmitheros vermivorus. Worm-eating Warbler.—Reported as a rare migrant by Mr. W. W. Woodruff.

Helminthophila pinus. Blue-winged Warbler.—Reported as a tolerably common migrant by Mr. W. W. Woodruff.

Helminthopila rubricapilla. Nashville Warbler.—Tolerably common migrant. I have secured dozens of specimens under the electric lights.

Helminthophila celata. Orange-crowned Warbler.—Reported as a rare migrant by Mr. Woodruff.

Helminthophila peregrina. Tennessee Warbler.—Common migrant. I believe this warbler breeds here, as I have shot young in the middle of July.

Compsothlypis americana usneæ. Northern Parula Warbler.—Common migrant.

Dendroica tigrina. .Cape May Warbler.—Common migrant. I have found dozens under the electric lights.

Dendroica æstiva. Yellow Warbler.—Common summer resident.

Dendroica cærulescens. Black-throated Blue Warbler.—Common migrant. I have found many under the electric lights.

Dendroica coronata. Myrtle Warbler.—Common migrant. I have found many under the electric lights.

Dendroica maculosa. Magnolia Warbler.—Common migrant. I have found many under the electric lights.

Dendroica cærulea. Cerulean Warbler.—Rare in summer, common during the migrations. Many under the electric lights.

Dendroica pensylvanica. Chestnut-sided Warbler.—Tolerably common migrant. I have taken many under the electric lights.

Dendroica castanea. Bay-breasted Warbler.—Common migrant. Many under the electric lights.

Dendroica striata. Black-poll Warbler.—Common migrant. Many under the electric lights.

Dendroica blackburniæ. Blackburnian Warbler.—Tolerably common migrant. Many under the electric lights.

Dendroica dominica albilora. Sycamore Warbler.—Tolerably common migrant. I have found it under the electric lights.

Dendroica virens. Black-throated Green Warbler.—Common migrant. I have taken it under the electric lights.

Dendroica kirtlandi. Kirtland Warbler.—The last record is of one

found under the electric light mast on October 14, 1886, by Mr. H. E. Chubb. (This is the first report of this capture.—Ed.)

Dendroica palmarum. Palm Warbler.—Tolerably common migrant.

Seiurus aurocapillus. Oven-bird.—Tolerably common summer resident.

Seiurus noveboracensis. Water-Thrush.—Tolerably common migrant.

Geothlypis formosa. Kentucky Warbler.—Tolerably common during the migrations. I think that it breeds here.

Geothlypis agilis. Connecticut Warbler.—Tolerably common migrant. I have found dozens of them under the electric lights.

Geothlypis philadelphia. Mourning Warbler.—Tolerably common migrant. I have found a few under the electric lights.

Geothlypis trichas brachidactyla. Northern Yellow-throat.—Common summer resident.

Icteria virens. Yellow-breasted Chat.—Rare in summer; formerly common.

Wilsonia mitrata. Hooded Warbler.—Tolerably common migrant.

Wilsonia canadensis. Canadian Warbler.—Common migrant.

Setophaga ruticilla. American Redstart.—Common summer resident.

Anthus pensilvanicus. American Pipit.—Tolerably common migrant.

Galeoscoptes carolinensis. Catbird.—Common summer resident.

Toxostoma rufum. Brown Thrasher.—Common summer resident.

Troglodytes ædon. House Wren.—Common summer resident.

Olbiorchilus hiemalis. Winter Wren.—Tolerably common in winter.

Telmatodytes palustris. Long-billed Marsh Wren.—Common summer resident.

Certhia familiaris americana. Brown Creeper.—Tolerably common migrant and winter resident.

Sitta carolinensis. White-breasted Nuthatch.—Common resident.

Sitta canadensis. Red-breasted Nuthatch.—Tolerably common migrant.

Bæolophus bicolor. Tufted Titmouse.—Common resident.

Parus atricapillus. Chickadee.—Common resident.

Regulus satrapa. Golden-crowned Kinglet.—Common migrant and winter resident.

Regulus calendula. Ruby-crowned Kinglet.—Tolerably common migrant.

Polioptila cærulea. Blue-gray Gnatcatcher.—Tolerably common in summer.

Hylocichla mustelina. Wood Thrush.—Common summer resident.

Hylocichla fuscescens. Wilson Thrush.—Tolerably common migrant. Many under the electric lights.

Hylocichla aliciæ. Gray-cheeked Thrush.—Tolerably common migrant. Many under the electric lights.

Hylocichla guttata pallasii. Hermit Thrush.—Tolerably common migrant.

Merula migratoria. American Robin.—Common summer resident.

Sialia sialis. Bluebird.—Common summer resident.

SOME WESTERN ADIRONDACK BIRDS.

F. H. HALL.

Four weeks during late August and early September, 1906, were spent by a companion and myself in a canoeing trip through about twenty beautiful lakes of the western Adirondacks. In my anticipations, not a small part of the pleasure of the trip lay in the expected opportunity it would give to see the birds, both new and old, in strictly "wild" surroundings. We found, alas! that the wildness of a quarter century ago is truly a thing of the past. These lakes have become most popular as summer resorts, and cottages and hotels almost line the shores of those not on "State Land." Hardly a day passed during our 150-mile trip from Old Forge to Saranac Lake on which we did not hear the querulous voice of the quarrelsome English Sparrow—striking evidence of fairly permanent human occupancy of the wooded hillsides and foliage hidden valleys that border these sparkling lakes. For considerable distances in any direction from a summer hotel, lakeside village, or lumber camp, this "rat of the air" was liable to be the principle bird in range of eye or field glass. Wild, still, however, are many square miles of territory adjacent to Fulton Chain, Raquette, Blue Mountain, Forked, Spectacle, and the Saranac Lakes, but the forests are hardly primeval. Any considerable areas untouched by the lumberman's ax are hard to find even on lands supposedly protected by the Constitution of the great state of New York. Too often, we fear, the protectors of the forests have been friends of the lumbermen, and have been guided by the significant query, "What's the Constitution between friends?"

But we are inclined to think, contrary to Professor Eaton's conclusion from his month's investigations about Mt. Marcy, that human occupancy is not so much a menace as a protection to much of the bird life in these regions. We certainly found both species and individuals most numerous along the lakes and carries most frequented by resorters; and it was about lumber camps, rather than in the heart of the woods, that we learned to look for our most interesting "birding." It is true that boys carry rifles, shotguns, and revolvers into the woods, and they probably have materially reduced the numbers of large woodpeckers, herons, Ospreys, Loons, grouse, Black Ducks, Wood Ducks, and similar birds once a noticeable feature of this section. So far as our observations extended, however, small birds suffer far less from the summer resorter's rifles than do the red squirrels that are undoubtedly the greatest obstacle to the stocking of these woods with thrushes, sparrows, wrens, flycatchers, vireos, and warblers.

It would certainly be an interesting and valuable study to trace the development of bird life during the next ten years in this rapidly settling section.

Opportunity for careful study was not as good on our trip as I had hoped for, for the length of the journey made it necessary to set up camp a dozen times, and this operation, with the daily routine when established, and with the long stretches of paddling through waters barren of bird life, used up a surprising amount of our time. On side trips, however, to Limekiln and Little Moose lakes, Brown's Tract and Clear ponds, and Bald, Black Bear, West, and Blue Mountains, as well as on the "carries," and on our exceedingly pleasant paddles on Raquette River, I was able to spend some time in noting the birds, though even here I hardly felt like trespassing too long on my partner's forbearance, since he was not a bird enthusiast. However, some notes upon the birds we saw may interest others, since the field is one not yet thoroughly covered by ornithologists.

At Fulton Chain station are the holes of a large colony of swallows, presumably the Cliff Swallows, since we saw many of these, as well as of Tree Swallows, at various points along the route. Their butterfly-like flitting over the lakes at first

made me think them the Rough-winged, since I am not very familiar with either species, but a closer view showed plainly the light rump, placing their identity beyond question. At Raquette Lake two telephone wires extend from the mainland to an island, unsupported for 400 or 500 feet, perhaps more; and for more than half this distance swallows lined these wires at sunset one evening as we paddled below them. We estimated the number of birds on the wires at fully 500, and the air over the lake as far as we could see was lively with others. It was almost too dark to be certain of the identity of these swallows, but they were probably Tree Swallows. At other times we saw both the Bank and the Rough-winged Swallows, while Barn Swallows and Chimney Swift were noted near the village of Old Forge, Blue Mountain Lake, and Long Lake.

In nearly all our camps the early morning call of the Red-eyed Vireo was almost as penetrating and insistent as the scolding of the English Sparrow near the settlements. Yellow-throated and Blue-headed Vireos were also seen, though rarely; but no Warbling, White-eyed, or Philadelphia Vireos were either heard or seen; possibly because they had already begun the fall migration. This was certainly true of many warblers, since only late stayers were in evidence—Myrtle, Black-throated Blue, Black-throated Green, Pine, Canadian, Yellow, and Black and White, were fairly common, as were the Oven-bird and Water-Thrush; while one or more individuals were seen of Northern Parula, Cape May, Magnolia, and Chestnut-sided Warblers, and American Redstart and Northern Yellow-throat.

The calls of many flycatchers were heard at various times, but upon one of our side trips—to Little Moose Lake—we found about an old lumber camp what appeared to be a paradise for these alert insect hunters. In less than ten minutes, and without leaving my seat upon a convenient stump beside the road, I was able to identify positively the Kingbird, Phœbe, Wood Pewee, Crested Flycatcher, Least Flycatcher, and Yellow-bellied Flycatcher, while what was probably the Olive-sided obstinately kept disappointingly out of range. All of these

species were also seen at other times, but nowhere else were more than two species seen simultaneously.

Other birds were also quite plentiful about this camp, among those noted being Hairy and Downy Woodpeckers, Golden-crowned Kinglet, Bluebird, Robin, White-crowned Sparrow, Song Sparrow, and Chipping Sparrow. Many of the warblers listed above were seen at another partly cleared area along the road leading past this old camp.

On another side trip, by steamer from Raquette Lake station to Blue Mountain Lake, we had our best opportunity to study the Osprey, though several of these were seen at other times. The steamer runs for several miles through Marion River, a very tortuous channel through timber killed by high water, and for much of the distance an Osprey kept just ahead of us, evidently hunting the fish that were frightened into shallow water by the advancing boat. Several times the bird's headlong plunges into the water were profitless, but at other times small fish were caught and hastily eaten upon some dead branch. Finally a fish of some size was caught and the Osprey flew back over the woods toward Raquette Lake.

Perhaps the greatest surprise of our trip, in the bird line, was the lighting, only a few feet from our canoe, of a Northern Phalarope. I had never seen these birds before, and to have a "sandpiper," as I thought it when in flight, calmly drop into the water and paddle about in circles almost within paddle reach of us, marked that day with a star in my bird calendar. Later in the same day two more of these peculiar long-legged swimmers were seen, but not so close at hand.

Other days similarly honored were those which brought within sight the Bald Eagle, the fast vanishing Northern Raven, the American Crossbill, a flock of mergansers just before our tent door, a Least Sandpiper "scuttling" along the rocky shore of an island in Saranac Lake, and a Wood Duck leaving her tree nest to land in the water through which our canoe had just passed. All these were new or rare birds on my list.

The full list of species seen so as to be positively identified is as follows:

Colymbus auritus. Horned Grebe.—Few seen; two on Fourth Lake.

Podilymbus podiceps. Pied-billed Grebe.—One, on Marion River inlet of Raquette Lake.

Gavia imber. Loon.—But one seen; on Eagle Pond.

Larus argentatus. Herring Gull.—Seen in small flocks or singly. on Fourth Lake, Raquette, Long, and Saranac lakes.

Larus philadelphia. Bonaparte Gull.—With Herring Gulls on Fourth Lake; mainly immature specimens.

Merganser americanus. American Merganser.—A flock of eight remained for a day on upper Stony Creek Pond (Spectacle Lakes).

Anas obscura. Black Duck.—A pair seen on Third Lake; two pairs or a pair and young on Eagle Pond; small flocks or individuals in flight on South, Raquette, and Long lakes.

Aix sponsa. Wood Duck.—One female on Raquette River.

Botaurus lentiginosus. American Bittern.—One seen, others heard in the marsh along the west side of Long Lake.

Ardea herodias. Great Blue Heron.—Seen on Seventh, Raquette, Long and Upper Saranac lakes and Raquette and Saranac rivers.

Butorides virescens. Green Heron.—One kept just in advance of us for two miles on Raquette River below Long Lake.

Palaropus lobatus. Northern Phalarope.—One in the water on the Raquette River outlet of Raquette Lake; others on the shore.

Actodromas minutilla. Least Sandpiper.—But one seen; on the rocky shore of an island in Upper Saranac Lake.

Actitis macularia. Spotted Sandpiper.—Occasionally seen, but not common.

Oxyechus vociferus. Killdeer.—One seen, others heard near Blue Mountain Lake (village).

Canachites canadensis canace. Canada Spruce Grouse.—Three disturbed in a new growth along the road from Raquette Lake to Brown's Tract Pond.

Bonasa umbellus. Ruffed Grouse.—A single specimen only. Eighth Lake carry. Reported quite plentiful and tame.

Circus hudsonius. Marsh Hawk.

Accipiter velox. Sharp-shinned Hawk.—Hawks were quite numerous over the entire forest area passed through. Marsh and Red-tailed Hawks were the most numerous.

Accipiter cooperi. Cooper Hawk.

Buteo borealis. Red-tailed Hawk.

Buteo platypterus. Broad-winged Hawk.

Haliæetus leucocephalus. Bald Eagle.—In flight over Raquette Lake; apparently large speciments of a mature eagle.

Falco sparverius. American Sparrow Hawk.—A specimen positively identified at the upper end of Eighth Lake, others seen but at a distance. Less common than the larger hawks.

Pandion haliaetus carolinensis. American Osprey.—A single bird seen on Fourth, Raquette, and Lower Saranac lakes and on

Marion River. A nest near the railroad south-east of Brown's Tract ponds.

Syrnium varium. Barred Owl.—A pair on the trail up Black Bear Mountain; others, as well as smaller owls, occasionally heard.

Ceryle alcyon. Belted Kingfisher.—Numerous on all lake shores. Very common along Raquette River.

Dryobates villosus. Hairy Woodpecker.—But few seen.

Dryobates pubescens medianus. Downy Woodpecker.—Quite common.

Sphyrapicus varius. Yellow-bellied Sapsucker.—Only one noticed.

Ceophlœus pileatus abieticola. Northern Pileated Woodpecker.—Seen by my friend at camp on Seventh Lake.

Melanerpes erythrocephalus. Red-headed Woodpecker.—A pair seen near the village of Long Lake; others occasionally noticed.

Colaptes auratus luteus. Northern Flicker.—Seen at Old Forge, but not noticed during last half of the trip.

Antrostomus vociferus. Whippoorwill.—One heard on Spectacle Lakes.

Chætura pelagica. Chimney Swift.—A few near villages.

Tyrannus tyrannus. Kingbird.—Seen only occasionally.

Myiarchus crinitus. Crested Flycatcher.—Fairly common.

Sayornis phœbe. Pœbe.—Common about villages and camps.

Nuttalornis borealis. Olive-sided Flycatcher.—Occasional.

Contopus virens. Wood Pewee.—Several seen about lumber camps.

Empidonax flaviventris. Yellow-bellied Flycatcher.—Occasional

Empidonax minimus. Least Flycatcher.—Quite a few seen.

Otocoris alpestris praticola. Prairie Horned Lark.—Seen only on cleared land near Long Lake and Saranac villages.

Cyanocitta cristata. Blue Jay.—Very common.

Perisoreus canadensis. Canada Jay.—Only one pair seen—on West Mountain. Apparently quite local in distribution.

Corvux corax principalis. Northern Raven.—One seen at Spectacle lakes. Said to be common in places.

Corvus brachyrhynchos. American Crow.—Many seen, but not in large flocks as about Geneva.

Molothrus ater. Cowbird.—One small flock heard, two birds seen on Seventh Lake inlet, apparently migrating.

Agelaius phœniceus. Red-winged Blackbird.—No large flocks seen, but specimens noted frequently along inlets and reedy shores.

Sturnella magna. Meadowlark.—One seen on the road to Limekiln Lake.

Scolecophagus carolinus. Rusty Blackbird.—A small flock seen near Inlet.

Quiscalus quiscula æneus. Bronzed Grackle.—Less numerous than Red-wing.

Pinicola enucleator canadensis. Canadian Pine Grosbeak.—One pair seen on Harding Island, Raquette Lake.

Carpodacus purpureus. Purple Finch.—Not common—at least not often seen. Noticed at the Inlet, at Eighth Lake carry, and on Hen Island, Raquette Lake carry, at the foot of Eighth Lake. Very tame.

Loxia curvirostra minor. American Crossbill.—Only one seen, though specially sought.

Astraglinus tristis. American Goldfinch.—Quite common, especially on elevated clearings.

Poœcetes gramineus. Vesper Sparrow.—A few seen, most on the meadow west of Long Lake village.

Zonotrichia leucophrys. White-crowned Sparrow.—Call note frequently heard; none in song. Fairly common.

Zonotrichia albicollis. White-throated Sparrow.—But few seen.

Spizella monticola. Tree Sparrow.—Some seen on mountain trails; not common.

Spizella socialis. Chipping Sparrow.—Fairly common, but less numerous than in more open country.

Spizella pusilla. Field Sparrow.—Only a few seen.

Junco hyemalis. Slate-colored Junco.—Very common, especially on the borders of mountain streams.

Melospiza cinerea melodia. Song Sparrow.—Common.

Melospiza georgiana. Swamp Sparrow.—A few seen about Raquette Lake station, and the railroad west.

Cyanospiza cyanea. Indigo Bunting.—Only one seen; near Raquette Lake.

Petrochelidon lunifrons. Cliff Swallow.—A colony at Old Forge. Seen over the lakes in considerable numbers.

Hirundo erythrogastra. Barn Swallow.—A few near the villages.

Iridoprocne bicolor. Tree Swallow.—Very numerous about Raquette Lake.

Riparia riparia. Bank Swallow.—A few, near Limekiln Lake.

Stelgidopteryx serripennis. Rough-winged Swallow.—Seen on Long Lake, but not common.

Ampelis cedrorum. Cedar Waxwing.—Not uncommon on the higher lands. Particularly noticed on Bald Mountain.

Vireo olivaceus. Red-eyed Vireo.—Very common throughout the entire trip.

Vireo flavifrons. Yellow-throated Vireo.—A few seen near Eighth Lake and Limekiln Lake.

Vireo solitarius. Blue-headed Vireo.—Only two seen.

Mniotilta varia. Black and White Warbler.—Several—Eighth Lake carry, Limekiln Lake trail, road west of lower Raquette Lake.

Compsothlypis american usneæ. Northern Parula Warbler.—A few seen near the railroad west of Raquette Lake station.

Dendroica tigrina. Cape May Warbler.—One, at Eighth Lake carry.

Dendroica æstiva. Yellow Warbler.—Several seen.

Dendroica cærulescens. Black-throated Blue Warbler.—A few on Eighth Lake carry.

Dendroica coronata. Myrtle Warbler.—Fairly common along open trails.

Dendroica maculosa. Magnolia Warbler.—Stragglers only seen.

Dendroica pensylvanica. Chestnut-sided Warbler.—Not common.

Dendroica virens. Black-throated Green Warbler.—Less numerous than Myrtle.

Dendroica vigorsii. Pine Warbler.—Only one seen.

Seiurus aurocapillus. Oven-bird.—On the trail from Seventh Lake up Black Bear Mountain. Probably fairly common.

Seiurus noveboracensis. Water-Thrush.—One seen along the shore of Long Lake.

Geothlypis trichas brachidactyla. Northern Yellow-throat.—Not common as expected. Probably most individuals had migrated.

Wilsonia canadensis.—Canadian Warbler.—Several seen.

Setophaga ruticilla. American Redstart.—But one recorded—Eighth Lake carry.

Galeoscoptes carolinensis. Catbird.—Occasionally seen.

Toxostoma rufum. Brown Thrasher.—Rare.

Olbiorchilus hiemalis. Winter Wren.—Several seen in Brown's Tract section.

Certhia familiaris americana. Brown Creeper.—Only a few seen Less numerous than White-breasted Nuthatch and Chickadee, with which it was commonly seen.

Sitta carolinensis. White-breasted Nuthatch.—Fairly common in places.

Sitta canadensis. Red-breasted Nuthatch.—Perhaps one to ten of the last.

Parus atricapillus. Chickadee.—Common.

Regulus satrapa. Golden-crowned Kinglet.—Only a few seen.

Hylocichla mustelina. Wood Thrush.—Seen at various points.

Hylocichla fuscescens. Wilson's Thrush.—Several seen near Seventh Lake; a few elsewhere.

Hylocichla swainsonii. Olive-backed Thrush.—One seen near West Mountain.

Hylocichla guttata pallasii. Hermit Thrush.—Three seen.

Merula migratoria. American Robin.—Not common except near villages.

Sialia sialis. Bluebird.—A few seen about lumber camps.

SOME MIGRATION RECORDS ALONG THE CEDAR POINT SAND SPIT, ERIE COUNTY, OHIO, 1906.

BY LYNDS JONES.

It has been my good fortune to spend the better part of one day each week from October 15 to November 26, along this stretch of sand beach which separates the extensive marshes east of Sandusky from the free waters of lake Erie. The rich fauna of the marshes on the one side and the distinctively open water fauna of the lake on the other, combined with the distinctly land fauna of the sand spit itself, forms a combination unsuspected for interest and value.

The part of the seven and a half mile sand spit traversed varies from about 4 to over 20 rods in width, and from a low sand bank over which the storm waves wash to considerable dunes and ridges perhaps fifteen feet above the surface of the marsh. The sand supports a thicket growth of bushes which are tangled with wild grape vines in luxuriant fruitage, and many trees of considerable size, mostly willows and cottonwoods. A rank growth of coarse grass fronts the lake out of reach of the waves, and the marsh side of the sand is sharply defined by a rank growth of reeds and swamp vegetation. The surface of the marsh, particularly at its eastern end, is nearly covered with dense vegetation, but here and there open water still remains. There are no dry islands in the marsh. At its western end the marsh merges into the open water of the bay.

My route lay from the town of Huron, at the mouth of Huron river, where the marshes are fast disappearing before the onslaught of the dock and land makers in preparation for a mammoth ore dumping ground or else another huge steel works, westward along the beach some six miles, to a little west of the middle of the sand spit proper. The best feeding ground for gulls and shore birds seemed to be the beach in the immediate vicinity of Huron, where quantities of garbage are washed ashore during northerly winds. More or less extensive fields lie immediately south of the marshes, where geese are wont to spend the early morning hours. It has frequently happened that the part of the route between Huron and the

head of the marsh—the beginning of the sand spit—proved the key to the day, for it is across here that many of the birds fly from the lake to the fields and back again. Many ducks passed across the sand spit to and from the marsh and lake, and grebes fed in the surf or mingled with the Coots in the open waters of the marsh.

Tree Sparrows were first seen on the sand spit on October 22, some days before any were noticed elsewhere in the region. White-throated Sparrows were common everywhere in the thickets of the sand spit up to and including October 19, but none were seen there or anywhere else after that date. Savana Sparrows remained until the 23d of October, and were not found elsewhere as late into ten days. Swamp Sparrows were fairly numerous up to October 29, and one was found as late as November 26.

Black Ducks appeared in the marshes in considerable numbers on October 29, and are still (Nov. 26) very numerous. The first Mallards were seen in the marshes October 23, the first Lesser Scaups on the 15th, the first Pintails and American Scaups on the same day, and a female Wood Duck on the 23d. Old-squaw, American Golden-eye, and Ruddy Duck were first found on the lake adjoining the marshes on November 12. A flock of Greater Snow Goose numbering more than 60, and a flock of 30 Blue Goose passed inland on October 29, and a flock of 38 Greater Snow, and of 18 Blue were studied at close range in the snowstorm of November 12, on which date a flock of six Whistling Swans flew low eastward along the sand spit. Three companies, aggregating 35 individuals of Whistling Swans, were recorded November 19.

Wilson's Snipe lingered in the marshes until October 23, when five were noted. On the beach two Greater Yellow-legs and five Red-backed Sandpipers were found on October 27, and one Sanderling on the 29th, and 14 Killdeers were recorded on November 12. They were gleaning at the water's edge in the rubbish of the beach.

Two King Rails were noted October 15, and one on the 23d. Coots were present in great numbers on November 26, and at that time gave no indications of departure. The last Great Blue Heron was recorded on October 15. His tracks indicated that

he was feeding upon the dead fish cast upon the beach by the storm of the previous week.

A flock of 20 or more Pine Siskins have ranged along the sand spit ever since they were first seen, on October 15. Three White-winged Crossbills, two bright males and one female, were found just east of the eastern end of the sand spit on November 5. Their occurrence in northern Ohio even in midwinter, is rare.

A female Blackburnian Warbler, in excellent condition, was found on the sand spit October 15. Myrtle Warbler was common there up to October 29.

The last House Wrens found anywhere were noted in the shrubbery bordering the marsh, October 15, and three Long-billed Marsh Wrens were found here on November 5, and one was heard singing on November 19.

The last Hermit Thrushes to be found anywhere were seen here October 29, when three were found. Robins are still numerous, and find the abundant crop of wild grapes an easily obtained food supply.

Two Snowflakes were found on the beach on October 29, and every time since then numbers have been seen ranging along the beach.

A single Barn Swallow was hawking over the marshes on October 15, and on the 22d three Tree Swallows were there.

These unusual records, when combined with others less noteworthy, go to show that great possibilities lurk in this thin arm of sand which reaches far out into the waters of lake Erie. It is within reason to presume that there is no other region within such narrow bounds which would prove richer in bird life during the season of southward migration. This, the region west of Sandusky, and the chain of islands stretching across to Point Pelee will prove to be the key to the solution of some problems of migration and northward distribution of our birds.

TWO BIRDS NEW TO LORAIN COUNTY, OHIO.

BY LYNDS JONES.

Vireo philadelphicus. Philadelphia Vireo. A single individual was seen on September 21st, and again on the 24th, at

Oberlin. On May 24th, two were found at Ruggles Beach in Erie county, some seven and a half miles west of Lorain county, and one of them taken, but the above record constitutes the first actual county record for this vireo. The bird was in good plumage, and seemed to be singing softly.

Symphemia semipalmata inornata. Western Willet. The specimen taken on September 17th, at Oak Point, on lake Erie, is an adult male in fall dress. There remains little doubt in my mind that the specimens recorded from this state will prove to belong to the western race. All of the specimens should be critically examined. This record is not only the first one for this subspecies, but is the first for the species taken as a whole for this county. Lake shore records seem to be practically wanting on this side, although there are several for the Canadian side. The wing marks of this species would be certain to attract attention wherever the bird might be, hence, the argument that it has been overlooked, and will prove not so rare as it is now supposed to be, fails. Its occurrence in this region must be practically accidental.

THE WILSON BULLETIN.

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Edited by LYNDS JONES.

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EDITORIAL.

The response to the call for more local lists is highly gratifying. We have in prospect for succeeding numbers several interesting lists from little known localities which will be contributions to our knowledge of distribution, of which we stand in need. If this number of the BULLETIN reaches any person who lives in some outlying region, or in some region whose bird inhabitants have not received deserved attention, let it be the means of setting you to work compiling such a list. But bear constantly in mind that it is not the length of the list which is of the most importance, but rather the accuracy of the identifications. Be certain of each identification, or else relegate uncertain records to the Hypothetical list.

While we are earnestly calling for local lists, because such work is usually the work which first attracts bird students, we would not wish to give the impression that the compilation of a local list is the most important work before you in bird study. We have so many times reiterated the importance of life studies that it must be to some "as dry as Niagara." Go over your own experience in trying to find in the literature on birds the corroboration of some of your own observations, and then ask yourself how much remains to be done in life studies. Remember that both the editor and Mr. Frank L. Burns, Berwyn, Pa., are anxious to supply everybody who will undertake life studies of however little seeming importance with blanks for recording the facts learned. Plan to use several of these blanks the coming spring.

Unusual field activity during November has resulted in the finding of several species of birds which have not hitherto been recorded in

northern Ohio before late December or early January. This seems to presage an unusual southward movement of northern birds for this winter, not only in Ohio, but the country over, since Ohio is the key state in this respect as well as in politics. We feel confident that activity in the field during this winter will result in the finding of many unusual birds. Let us have your winter experiences in time for the March Bulletin.

It has been a constant regret to the editor that the department of General Notes has been so lacking for the last two years. In every observer's experience in the field there must be many things of interest which cannot well be worked into an article. These minor matters, as far as length of exposition is concerned, are therefore lost to others because they do not find their way into print. This ought not so to be. Send them in without waiting for the time for making up the copy for the next Bulletin to come. Fresh experiences from your field work are what enliven the pages of the Bulletin.

For the sake of getting this number of the Bulletin out promptly the result of the election of officers for 1907 will not be announced in it, as has been the custom, but will be deferred until the March number. It is always necessary to hold the Bulletin over for a week or more in order to receive the result of the balloting.

GENERAL NOTES.

Cupola, Chester County, Pennsylvania. In the early morning of July 11, it was rather foggy. Insect life was evidently not very high minded that morning, as the Barn Swallows were skimming low over the fields and apparently had to hustle for what food they secured. I was bringing the cows in from pasture, and was a little surprised to see a Barn Swallow fly up to one of them, snatch a fly from her back, and then skim over the fields.

One morning I was attracted by a great commotion among some Robins, and going to ascertain the cause I found a nest of this species, which was placed upon a horizontal branch of a willow. It was evident that there was something wrong about this nest, since the pair of Robins were flying about it and making a great noise. As I could see nothing from the ground below I climbed to the level of the nest and there came upon the offender. A red squirrel sat upon an adjoining branch holding a Robin's egg in his paws, coolly sucking it. I had long known this mammal to be called a nest robber, but here he was caught in the act.

Pensauken Creek, New Jersey, May 28, 1905. I found a Yellow Warbler's nest to-day which contained four young birds. The nest was placed in the crotch of a willow bush five feet from the ground. In another crotch of the same bush, on almost the same level—about four feet and six inches up— and only forty-six inches in actual measurement away was a Cardinal's nest, also containing four young birds of about the same age as the Yellow Warbler's. They were very close neighbors and apparently were living in harmony with each other. Would the warblers have nested as close to any other species? According to my observations the Cardinal seems to be a very peaceable bird. I once caged a male Cardinal with a female Red-winged Blackbird, and although he had a good weapon in his thick beak he, from the first, let her have her way, even to the extent of taking food away from him, and sex seemed to have nothing to do with it. CHRESWELL J. HUNT.

[Here at Oberlin a Robin had built her nest in a cozy nook in an evergreen tree and had brought the three eggs almost to the hatching point when a pair of English Sparrows decided that they must have that spot. War was declared and waged fiercely for three days, one or the other Robin remaining on the nest during the battle. A truce must have been agreed upon, for the sparrows proceeded to build their trashy nest upon the same branch, so close to the Robin's nest that they actually used one side of the Robin's nest for theirs. In due course the young sparrows appeared, and both families lived on peaceable terms during the week which the young Robins remained after the hatching of the sparrows. The impudence of the sparrows was certainly typical.—ED.]

DECREASE OF ICTERIDAE IN NORTH-EASTERN IOWA. In the Upper Mississippi Valley the influence which the Landshark has upon the migration of man into the Dakotas and Manitoba is apparent to all. There may be a close connection between this great migration of mankind and the paucity of blackbird life seen this autumn. In this locality, where flocks of blackbirds numbering at least thousands of individuals were seen no longer than three years ago, this fall there was seen one small flock containing ten Rusty Blackbirds, and another company of about 300. And of Bronzed Grackles one was seen at one time and four at another. During migration a year ago these species were not numerous at this place. ALTHEA R. SHERMAN.

A VENTURESOME NUTHATCH. For several days past, just at 1 o'clock p. m., a White-breasted Nuthatch has flown into my yard, perched on the sill of my neighbor's pantry window, crawled in through the slit in the bottom of the double window, and helped himself to the butter and cheese. It usually brings out a small piece of butter or cheese, but one day made off with a piece of cheese as

large as its head. I can imagine that my neighbors think that a very funny sort of mice are visiting their pantry, but it is too good a performance to watch to tell them what the visitor really is.

Kingston, Ontario. A. B. Klug.

Lorain County, Ohio, Fall Records, 1906. October 1st marked the culmination of the southward warbler migration, when the following were recorded for the last time. Black-throated Blue, Black-throated Green, Bay-breasted, Black-poll, Black and White, Cape May, Magnolia, Nashville, Tennessee, Palm, and Northern Yellow-throat. With these were found Red-eyed Vireo and Yellow-billed Cuckoo, both singing.

The first American Pipit was found on September 14, and another one on the 24th. The only other fall record for this species is October 19, 1897. It is usually fairly numerous in the spring.

The last Black-billed Cuckoo was found September 21. Except for the September 24, 1900, record, this is the latest for this species. October 1 is the latest for the Yellow-billed Cuckoo.

Bonaparte Gulls were first seen on October 1st, and are still present in considerable numbers in the region of Huron, Ohio.

Nine Solitary Sandpipers were found feeding at the Oberlin Sewer Farm on September 13, which is the latest fall record.

Two Yellow-bellied Sapsuckers were seen September 24th, which is the earliest fall record for this species by more than a week.

Green-crested Flycatcher was heard singing September 21st, and was not seen afterward. This is the latest record by just one week.

For the first time the Least Flycatcher was found September 14. The last were seen on the 21st. There are no other fall records of it in this county.

The last Baltimore Oriole was seen September 21, which is later by 15 days than any other record. It was a young male in full song.

The return of Slate-colored Junco on September 24 is a full week in advance of all other records. It became common by October 1st.

The finding of five Wilson Warblers, three of them in full dress, on September 14, is the second fall record for the county.

The return of Red-breasted Nuthatch on September 5th is unusually early. This species has been found in greater numbers than at any time hitherto in this county.

For the first time in the fall during my studies at Oberlin the Gray-cheeked Thrush was certainly identified on September 14, and was again seen on October 1. No doubt it regularly passes through this region on its way southward, but has hitherto been overlooked.

Hermit Thrush returned September 24, and became common October 1. It remained common until October 15, and the last were seen October 29.

There were no frosts until October 10, so that the foliage remained

so dense that birds were hard to see until the migrations of the smaller birds were almost over. Individuals of most species seemed to be less numerous than usual during the southward migrations.

LYNDS JONES.

NOTES FROM SENECA COUNTY, OHIO. On September 25th of this year I observed two Henslow's Sparrows at close range in a mass of tangled weeds on the banks of Wolf Creek. Being acquainted with this bird from observations in former years west of the Mississippi River, I was certain of the identification. This is the second published record for Ohio. It is an addition to my list of Seneca County birds.

On October 12th, I saw what I took to be a solitary individual of *Nuttalornis borealis* in a large elm tree. Never having met with this bird before I can add this bird to my Seneca County list only *ex hypothesi*.

W. F. HENNINGER.

Tiffin, Ohio.

ELECTION OF MEMBERS.

The following names are proposed for Active membership. Objections to any of these persons should be sent to the Secretary, Frank L. Burns, Berwyn, Pa.:

W. B. Barrows, Agricultural College, Mich.
J. H. Fleming, Toronto, Ont.
C. J. Pennock, Kennett Square, Pa.
B. W. Griffiths, West Philadelphia, Pa.
F. H. Hall, Geneva, N. Y.
W. C. Staat, Grinnell, Iowa.
Zeno Metcalf, Columbus, Ohio.
C. C. Maxfield, Hartford, Ct.

For Associate Membership, T. E. Hanghey, Mt. Vernon, Ohio.

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